SWIMMING AND DIVING

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SWIMMING AND DIVING

by

HARVEY D. TORBETT

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SWIMMING AND DIVING

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B. A. Mujahid Baluch, PTS
7th March, 1972.

Chapter I

IN THE SWIM

Everyone wants to be able to swim. No-one knows this better than those who cannot swim, whether it is from lack of opportunity, ill-health during youth, or for any other reason. Certainly there is no need to remind any person who has sat enviously watching others in the water, of the tremendous pleasure and health-giving exercise which swimming can bring.

Fortunately, it is never too late to learn! Every day more and more non-swimmers are somehow inspired by new confidence, and master the basic essentials of swimming. Sometimes this is achieved through the able advice and assistance of an instructor or teacher, sometimes through the help of a good friend, and sometimes through the intelligent use of a little book such as this. However it is managed, once the erstwhile non-swimmer has managed the first few, simple strokes and savoured the sheer pleasure and triumph of supporting his body on the surface, he soon enters fully into the delights and simple pleasures so long denied him. Then it is simply a question of time, practise and personal inclination before he masters the activity as a pleasant relaxation, as a highly competitive sport, or as an introduction to the more advanced sport of diving—or, even more advanced still, as an aqualung specialist.

To bring such stimulating new horizons within

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your grasp is chiefly a business of determination and confidence, requiring only the initial determined decision to begin all over again, write off past failures and start right at the beginning. This takes courage: courage to make the initial decision, courage to continue in the face of difficulty and courage to be willing to begin again—even at the risk of being laughed at by those who should know better.

First, the beginner must become accustomed to the water and this cannot be done in the comfort of an easy chair at home. It is difficult really to get to know the water during a brief holiday by the sea, unless you can already swim, because the slightest swell or chop magnifies the problems. There is only one place to begin, and this is at the local public baths.

In most countries today there are plenty of public swimming pools where the beginner can conquer his very personal problems under the safest, cleanest and most suitable conditions. In every such bath there is always a properly trained assistant on duty. His job is to go immediately to the help of anyone requiring assistance or in difficulties in the water. He is usually referred to by the pool staff as the "Duty Water Rat", and his presence at the baths, whether advertised or not, can be relied upon. This must surely give any nervous beginner considerable confidence.

Nevertheless, it must be admitted that the bath is, to the complete novice, a rather forbidding place. Especially is it so amidst the noisy atmosphere where screams of delight and pleasure are magnified by the inevitable and unavoidable accoustic properties of any building designed to house a large bath.

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The novice finds everyone else pleasure-bent and knowing exactly what to do with his or her time. Yet few people will notice the slightly nervous beginner despite his quite understandable self-consciousness. There is really very little possibility that he will be laughed at. All other visitors are either too busy enjoying the fun, or too preoccupied with their own early practises, to mock the beginner.

In the interests of health, remember that you should make a point of postponing your visits to the baths when you are suffering from a cold or catarrh, or even a sore throat. If you have any kind of foot infection, such as athlete's foot or verucca, or an open sore, it is perfectly obvious that this should be treated by a doctor. Certainly the swimming bath is no place to go, for this would not only aggravate the infection but might spread it amongst others.

Assuming that you have a clean bill of health then, you will be anxious to remain this way. Personal toilets should be attended to immediately upon entering the building. Lavatories should be used before changing and, whilst it is easily conceded that the amount of dust and perspiration which a single person collects during the course of the day quite naturally is very little, it is essential that the shower is used *before* visitors enter the water.

It is quite easy to see that if this very small amount of dirt were multiplied by the large number of persons using the baths, the water would not remain clean and inviting for very long, and this would happen if everyone failed to clean themselves first.

Once you have taken a warm shower you must

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pass through the small, shallow footbath to reach the bath side. This is intentionally placed so that your feet are cleaned from the dust of the changing cubicles. Do not straddle or jump over it.

It is hardly necessary to remind a beginner to look for the shallow end of the pool before entering the water! Depths are usually marked boldly on the bath side, but if any doubt exists ask the attendant. Compare the depths with your own height and make certain that you can safely stand where you intend to enter. Later you may want to work in water which covers your shoulders, but to begin with, seek a depth which leaves you plenty of room to stand with head and shoulders above the water.

The beginner's problems start at once with the business of entering the water. However plainly marked the depths may be, the water certainly *looks* deep. Few beginners will feel confident enough to leap straight in, even if this were desirable, which it isn't. The majority of people will instinctively make for the steps, intending to walk down them into the pool. But this can be very unpleasant as the cold water creeps up the limbs in a manner which seems calculated to make any beginner change his mind about learning! So do not enter this way, but simply sit for a moment on the bath side where you know the depth will be suitable. Dangle your legs in the water (Fig. 1.) and half turn so that you can grasp the rail with one hand as you lower your legs a little further. Then you feel perfectly safe whilst slipping smoothly into the water without any fuss, and without that gradual coldness induced by water slowly creeping up the limbs. As you enter the water and clear the bath side,

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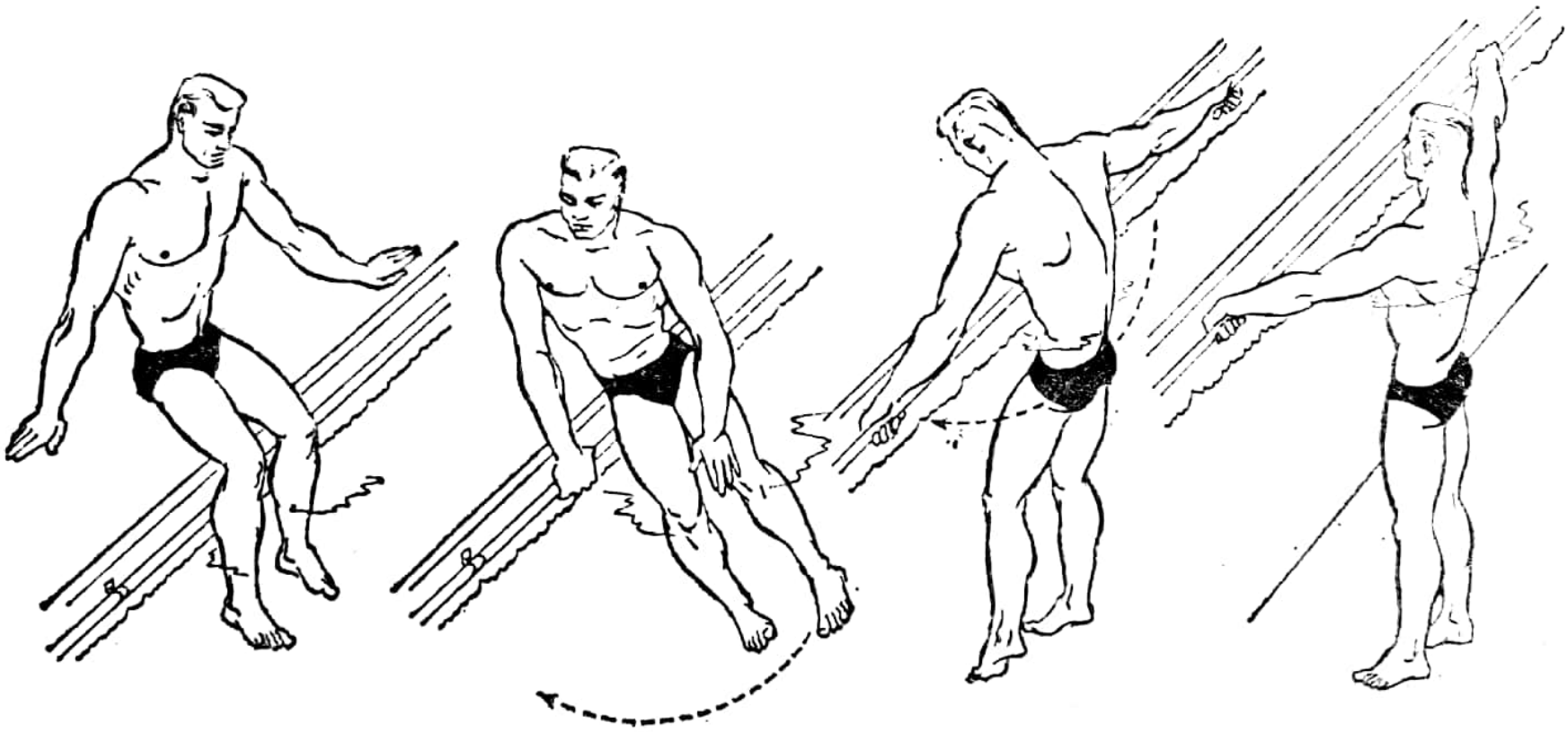

FIG. 1
Entering the Water

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complete your turn, and face the rail, which you can now grasp comfortably with your free hand. Once your feet are firmly placed on the bottom, leap up and down vigorously whilst holding the rail (Fig. 2.), and within a few minutes you will feel a warm and pleasant glow which is a mere foretaste of the many pleasures to come, and which will quickly accustom you to the water.

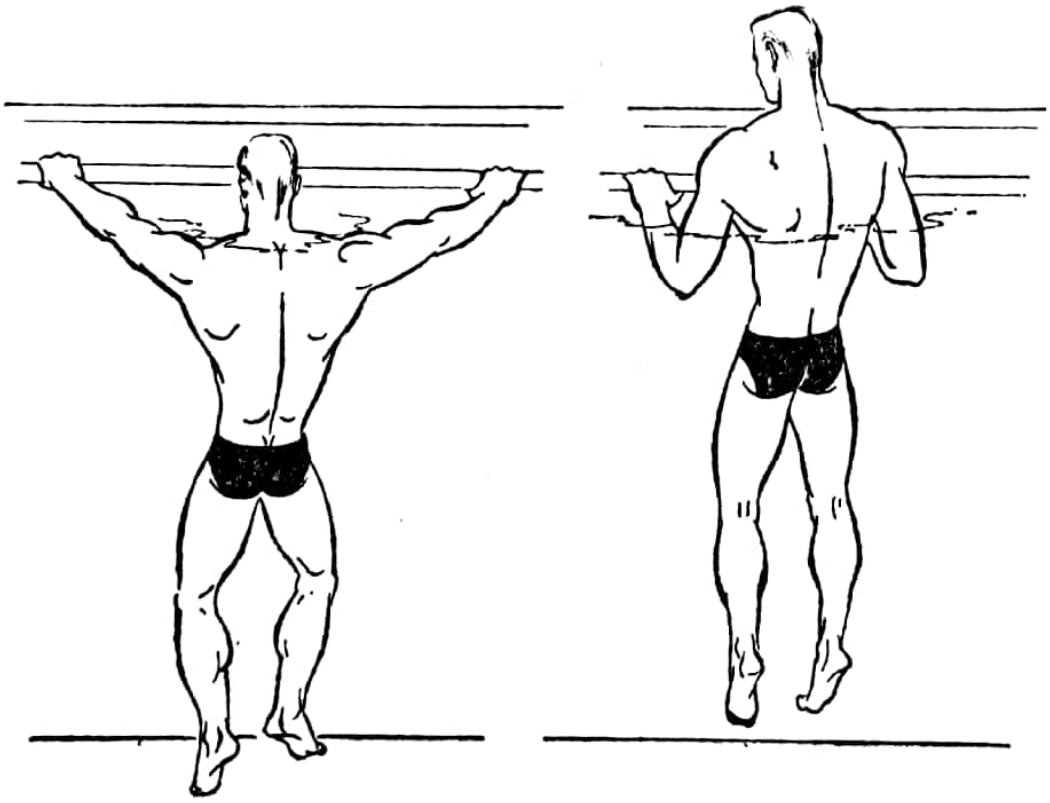

FIG. 2
Jumping at the Rail

INTRODUCTORY ACTIVITIES

You can hardly spend the afternoon at the bath side jumping up and down at the rail. Fun though this is, it would soon become boring, and once you are in the water, boredom is as great an enemy as fear. Conquer both then by following some of the routines indicated here. They are designed to bring confidence in the water, relieve monotony,

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and give you pleasant activities which keep your mind and body occupied so that by the time your first visit to the baths is over you will at least have enjoyed yourself without swimming, and feel up to repeating the visit. However, if you follow the intructions faithfully and carefully, you may well find that you have actually started to swim on your very first lesson—and this will certainly ensure a return visit.

WALKING ALONG THE BATH SIDE

Hold the rail with one hand and walk along across the shallow end. To assist in balancing, paddle with your free hand. Try walking backwards as well as forwards, then change sides and use the other hand. When you have become adept at this try walking towards deeper water until your shoulders are immersed and then turn and retrace your steps. (Fig. 3.)

FREE WALKING

Stand away from the rail and try walking slowly across the shallow end of the bath without using the rail. Lean forward a little, paddle like a dog with your hands to maintain balance, and make your way across as you do so. You will only require to be a foot or so from the rail to do this, and can grasp it if you stumble or fall. Practise at this will assist a great deal in balance and confidence.

WETTING THE HEAD

Hold the rail with both hands, facing the bath side. Bend the knees a little, take a good breath, and plunge the head and shoulders under by fully bending the knees. See that your head goes

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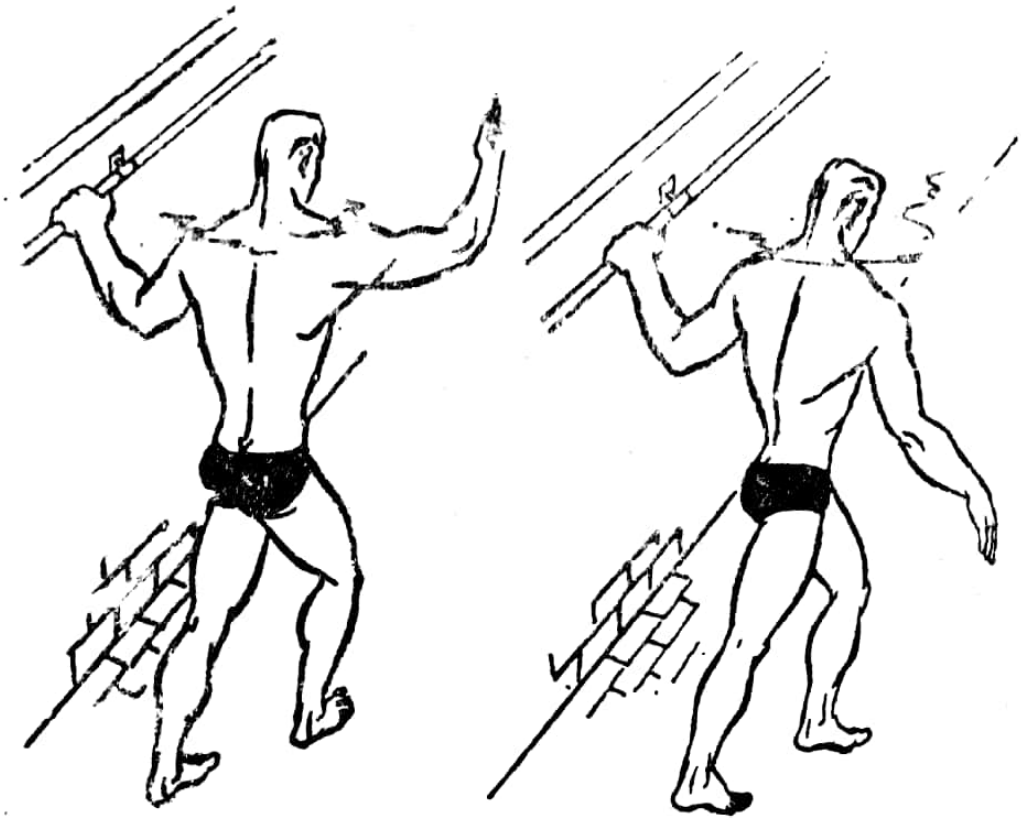

FIG. 3
Walking by the Rail

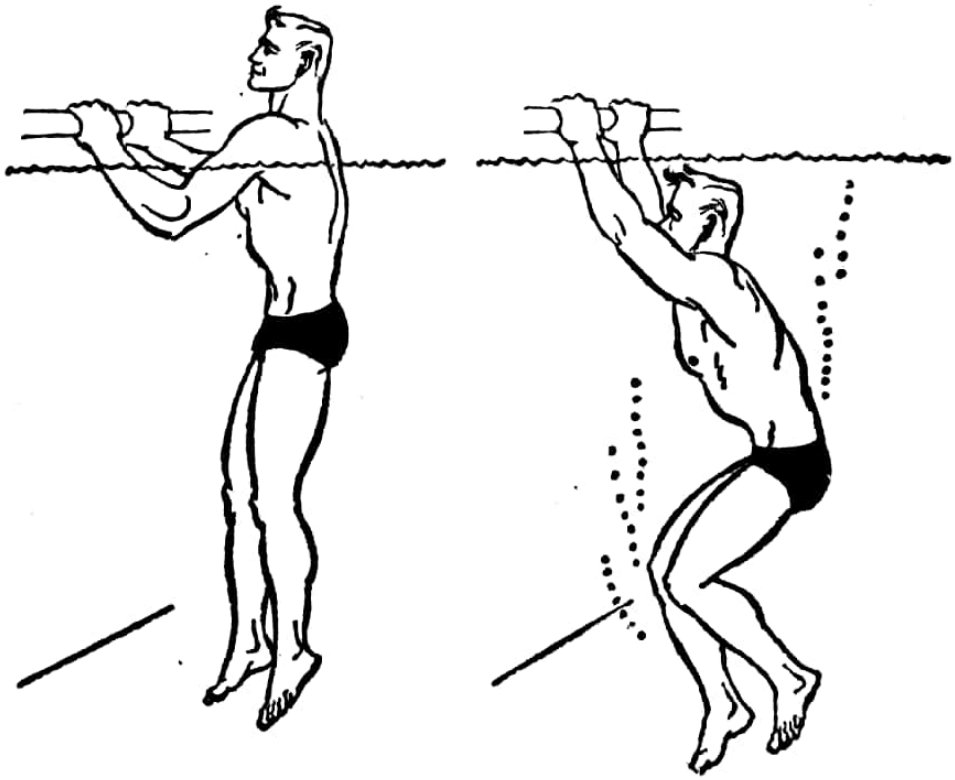

FIG. 4
Wetting the Head

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right under the surface, keep your eyes open, and shake your head vigorously when you break surface again. (Fig. 4.)

Repeat this several times, and try to get the knack of shaking your head *once only* with a swift twist to one side. This will fling all water free from your eyes and also throw your hair clear. Practise "ducking" again and again with your eyes open throughout the practise and this will stand you in good stead later.

BREATHING PRACTISES

When you are quite accustomed to "ducking" with eyes open, and have learned how to throw your head to one side to remove water from your eyes and hair you must tackle correct breathing. It is never too early to do this rhythmically, and it can be quite fun, too.

Face the bath side as for "ducking" and take a good deep breath. Duck under and breathe out vigorously through the nose and watch the bubbles rising to the surface. When you have completed the exhalation, pause a moment, then straighten the knees, break surface, and take a deep breath.

When you feel confident of this try it in quick succession several times, establishing a regular breathing pattern. Rhythmic counting will help.

1. Take a deep breath whilst counting up to three.
2. Duck.
3. Breathe out whilst counting up to three.
4. Surface and repeat.

You must now experiment to find the proper count to suit your particular breathing rhythm. It may be necessary to count up to four or five,

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or even six. Later you will learn to exhale through both the nose *and* mouth whilst under the surface, but during early activities it is best to use the nose only because bubbles from the mouth might otherwise rise directly into the nostrils causing you to sneeze or feel otherwise uncomfortable. When you are convinced that you have mastered controlled, rhythmic breathing try breathing out by the nose and mouth simultaneously.

A further enjoyable extension of this activity is to make it very much more strenuous by actually *leaping* each time you surface. Try to get the feet well off the bottom and gain as much height as you can. Gain height by pushing at the rail with your hands. On the downward movement bend the knees as the feet touch bottom and accompany the whole cycle with rhythmic breathing and shaking the head to clear water from the eyes and hair. You will enjoy the splashing and sensation this activity gives, and at any time during later activities when you feel a trifle cold, go straight to the rail and spend a few moments splashing up and down and you will soon learn how to keep warm.

WORKING WITH A PARTNER

If you have been fortunate enough to have company for your first visit to the baths you should combine activities with your partner. Take it in turn to perform "ducking" whilst holding hands opposite each other, away from the rail, and relying on your partner's hands for support. This will breed confidence between you and enable you to rely upon each other for more difficult practices later. Try playing children's games such as jumping around in a circle "ring 'a roses"

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fashion, and endeavour to enjoy each others company inventing new games to attempt as you learn to know the water better. Having company in this new venture will shorten considerably the period of "apprenticeship" for both of you.

LEARNING TO SWIM

By now you will have become sufficiently accustomed to the water to feel confident enough to try some definite swimming practises. These may be performed either at the rail on your own, or better still with your friend.

THE FIRST STEPS

Face the rail at arm's length, and step back a little so that you just cannot quite reach the rail with your hands even if you should lean. To begin with you need only be a few inches more than touching distance from the rail.

Now stand still, bend the knees slightly, and lean lightly forward at the waist until your shoulders are fully immersed. This will help you to maintain your balance whilst unsupported by the rail, and it will also prevent you becoming cold under the armpits. Now extend the arms along the surface towards the rail, and keep the palms of the hands downwards, and the hands together, thumbs touching. Notice that your fingers are a few inches from the rail, then look squarely to your front, close the mouth, and place the left leg slightly in front of the right. Take a deep breath and *lean* forward. It is most important that you firmly resist any temptation to jump at this stage. Simply lean forward and

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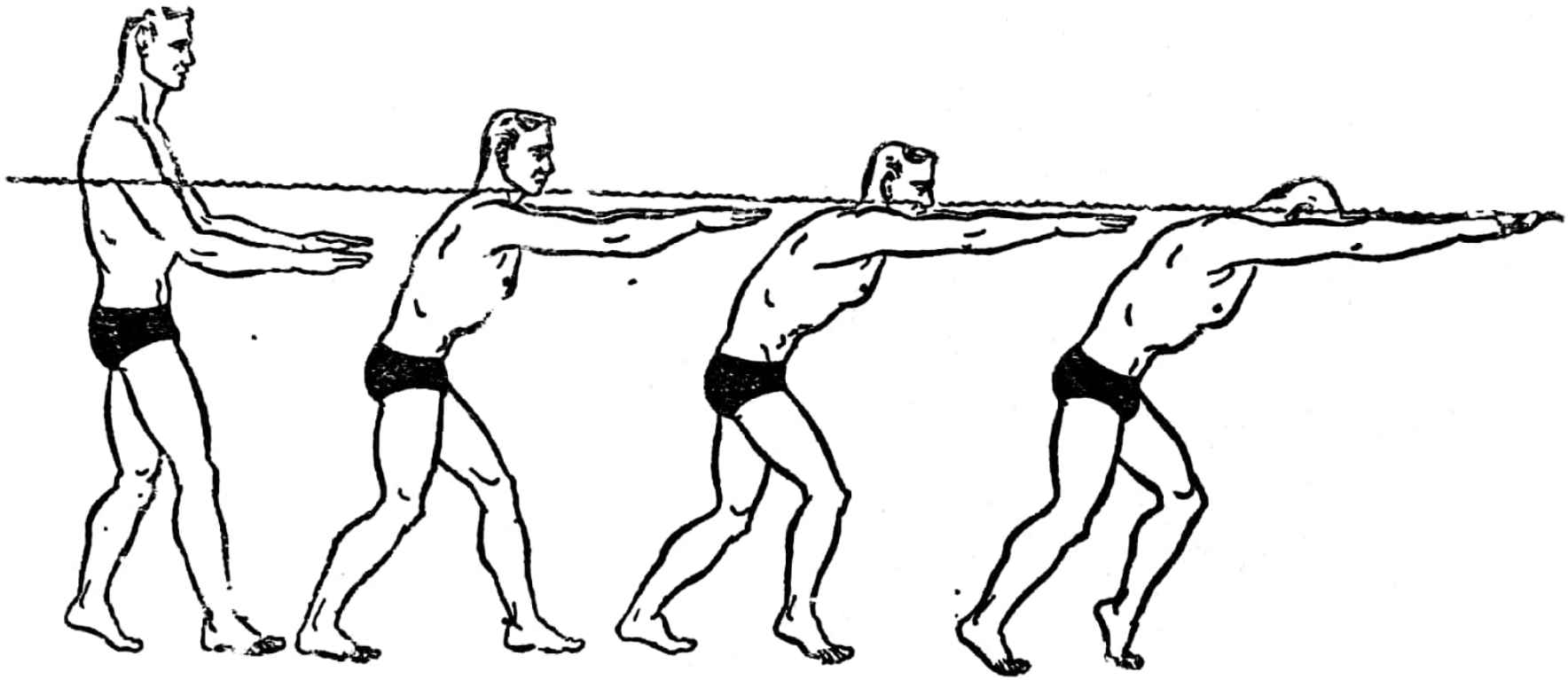

FIG. 5
Gliding to the Rail

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grasp the rail. To your surprise you will find this is easy. (Fig. 5.)

Now this must be repeated several times to give you a feeling of confidence, and then you must try standing further back, say a foot between the rail and your finger tips. Again you must resist the temptation to jump; it is quite unnecessary and you will find that you really do reach the rail simply by leaning forward towards it, when your feet seem to float off the bottom. No sooner do you reach that half-fearful moment when your feet no longer support you, then you have grasped the rail. Now, it is important to keep practising this, each time trying to increase the distance between your finger tips and the rail.

You may well be surprised by the distance you cover. If during these practises you think your head is going to sink, let it do so, but keep your eyes open and you will find yourself floating to the rail. It is certain you can hold your breath for the brief moment when your mouth is submerged momentarily! In any case, this should not occur unless you have increased the distance a great deal and, if it does happen, shorten the distance and try again.

There is a quite natural limit to the distance you can manage to move in this way, but it will be most comforting to realise that you actually *did* cover the distance—however small—unaided *and* with your feet *off* the bottom of the bath. The fact that you do not have to jump there makes for great confidence; after all, you did not walk to the rail and you did not jump there, so you must in fact have *swum* there. This seems unbelievable to anyone who so recently has had visions of floundering and struggling frantically in the

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water. Yet, if you think about it, it is certainly true that you swam those few inches, or perhaps even a couple of feet—whichever distance you managed—and, furthermore, you did it alone!

This is the first successful step, and a tremendously important one, towards swimming effectively. It was accomplished by *gliding*, using the natural buoyancy of the body assisted only by a very light push to give momentum when you leaned forward in the water. It is to be hoped that you accomplished this on your *very first visit to the baths* . . . actually beginning to swim!

This is a comforting and practical demonstration of the fact that water, which so often seems at first to be pushing you off your feet, will, if pushed back in a confident way, become not an enemy but a helpful and friendly ally. It also proves that when people tell you that the human body floats naturally, they are speaking the truth. See that you have the courage to accept it!

GLIDING

You have already accomplished some short glides successfully, and by now the term is quite self explanatory. Gliding is vitally important in the development of correct swimming techniques because it is upon this simple basis that all swimming strokes are built.

There are other positions for gliding, but the position with which you are at present concerned is the prone glide. In an *ideal* prone glide the body lies prone, as the name suggests, along the water's surface. The arms are outstretched in front of the head, with the palms of the hands downwards and thumbs touching. The legs should

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be close together, with toes pointing to the rear and the soles of the feet upwards (Fig. 6.). The head rests between the arms with the face submerged in the water, although the back of the head will probably break the surface.

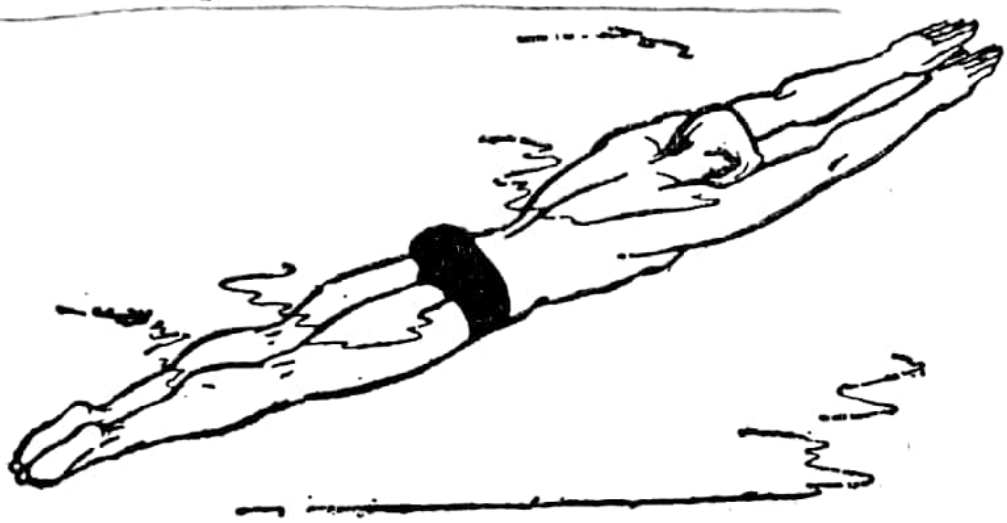

FIG. 6
Prone Floating or Front Gliding Position

This basic gliding prone position must be accomplished properly as soon as possible, but since it involves having your face downwards in the water, with your eyes open, the assistance of a friend is invaluable during the early stages. This avoids the necessity for you to swallow the odd mouthful of water when you come to the end of a glide, and before you have learned to stand up from the gliding position. It is possible for you to practise the glide with your head up and mouth free for breathing, provided you invoke the assistance of your friend, who must support you during the early exercises which follow.

THE TOWING GLIDE

This is practised in very shallow water where a novice friend will not mind walking about, a

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few feet from the rail. If you take it in turns with your friend you will both progress at a surprising rate.

Kneel in the water behind your friend, grasping him firmly at the hips. As he walks away, paddling with his arms to assist in balance, he should drag you behind him. In a very short distance you will find your legs rising to the surface. Now that you have no fear of losing the support for your head you must concentrate on keeping the rest

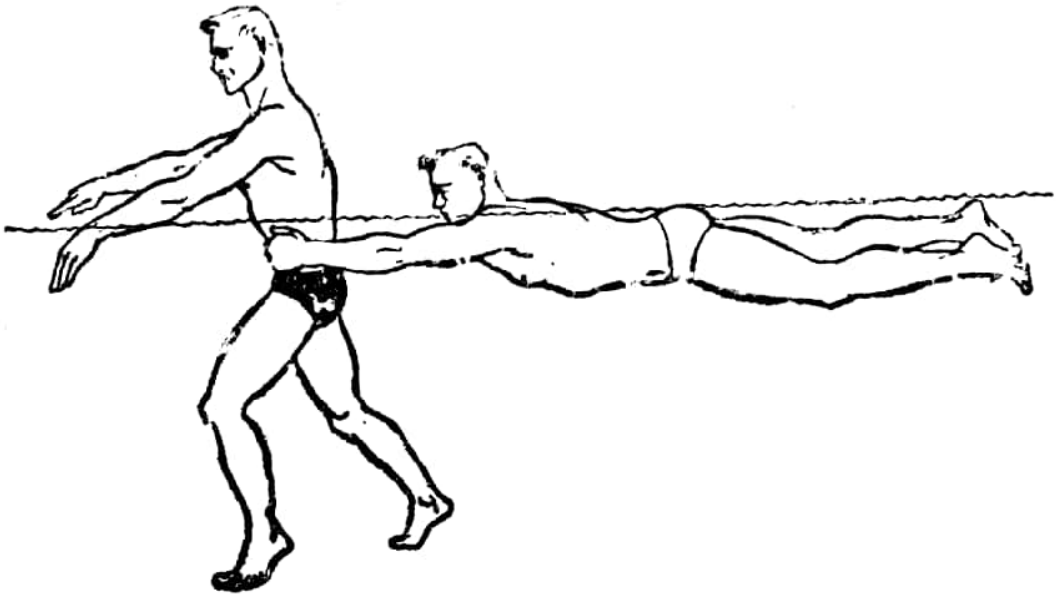

FIG. 7
Towing Hold

of your body in a perfect gliding position as your partner tows you across the bath. (Fig. 7.)

In rather *deeper* water, where your partner must walk with his shoulders submerged, you must lie behind him instead, holding firmly but easily at his shoulders as he paddles with his hands, leaning slightly forward, and tows you across the bath. (Fig. 8.) Remember to hold his shoulders, not his neck. He will not be keen to tow you for long or for any distance if you clamp your arms about his neck!

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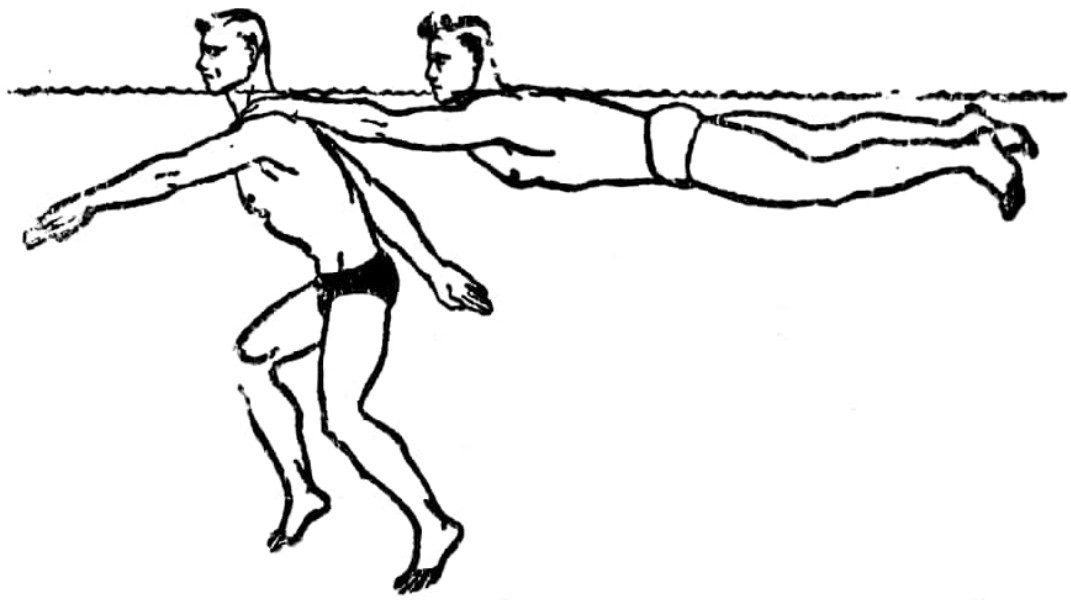

FIG. 8
Towing Hold

When both you and your partner have tried the two towing positions with some success, you should try again whilst facing each other. The towing partner walks slowly backwards, supporting the other under the chin and holding this well clear of the water. The towed partner's task is to allow his legs to rise freely to the surface and concentrate on that gliding position. (Fig. 9.)

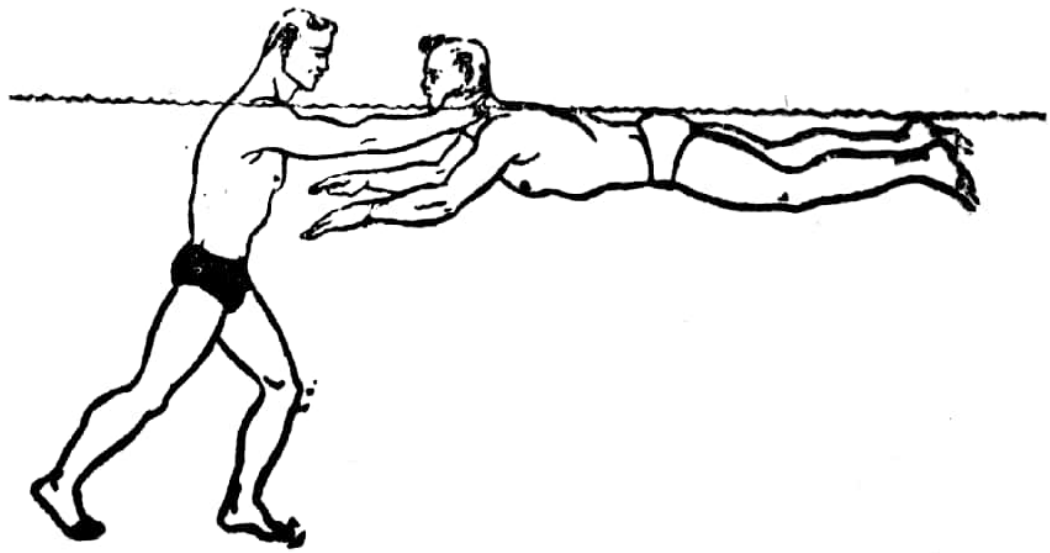

FIG. 9
Towing Hold

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When these earlier practises give further confidence you may progress to repeating the above but *without* the chin support. Instead you simply hold your partner's hands as he slowly walks

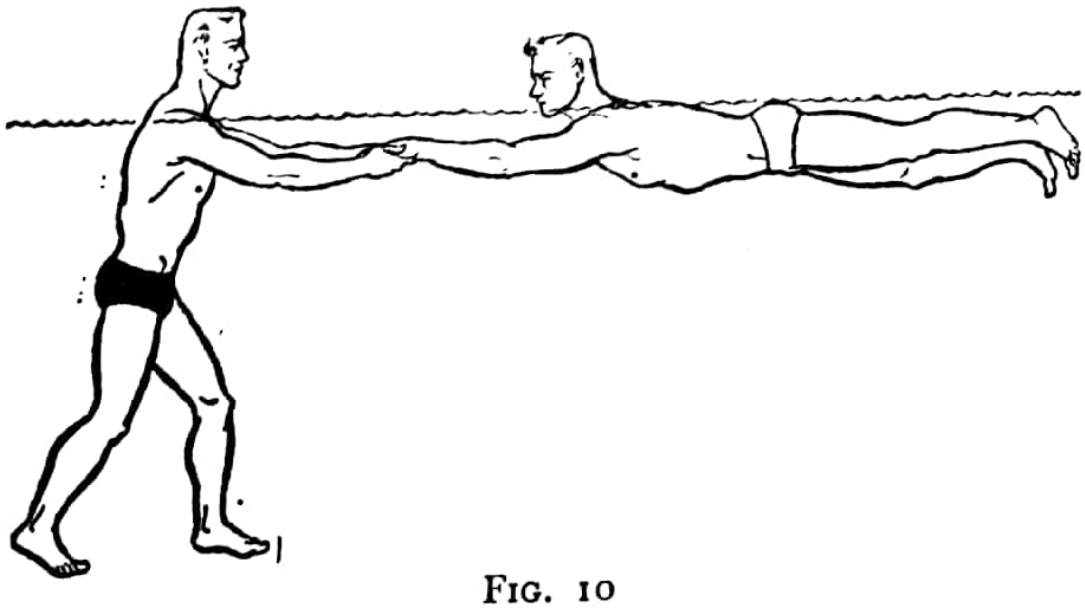

FIG. 10
Towing Hold

backwards. (Fig. 10.) Alternatively you may use a fore-arm grip, each grasping the other by the fore-arm. (Fig. 11.)

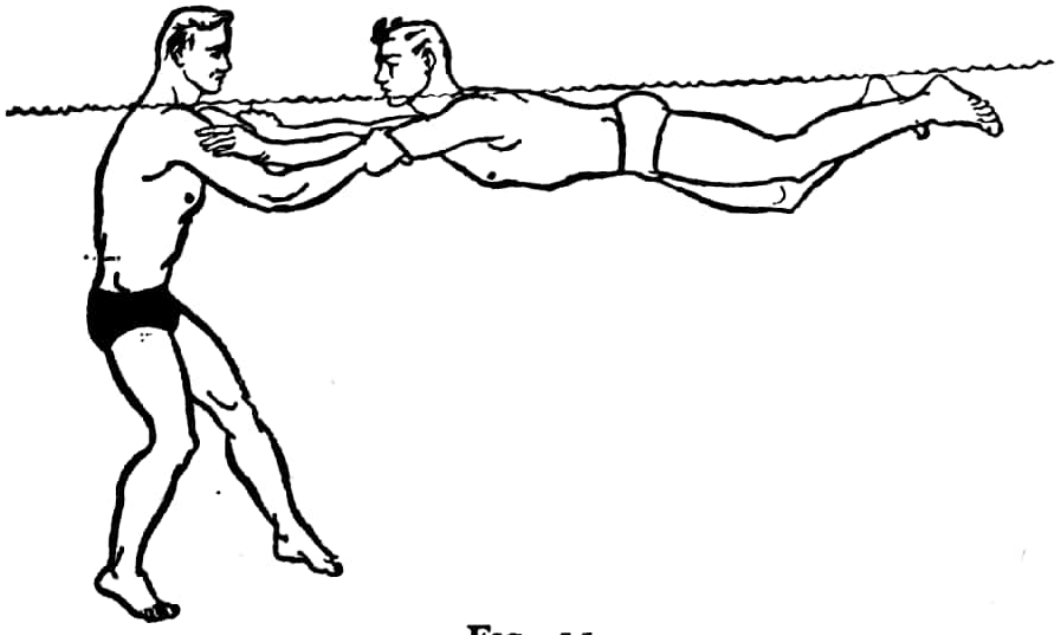

FIG. 11
Towing Hold

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BODY SUPPORTING

When you have become familiar with the various towing practises and have learned the correct gliding position it is valuable to try some body support practises. Stand facing the rail with your partner supporting you at the chest. Hold the rail with your outstretched hands as your partner works back along to support you,

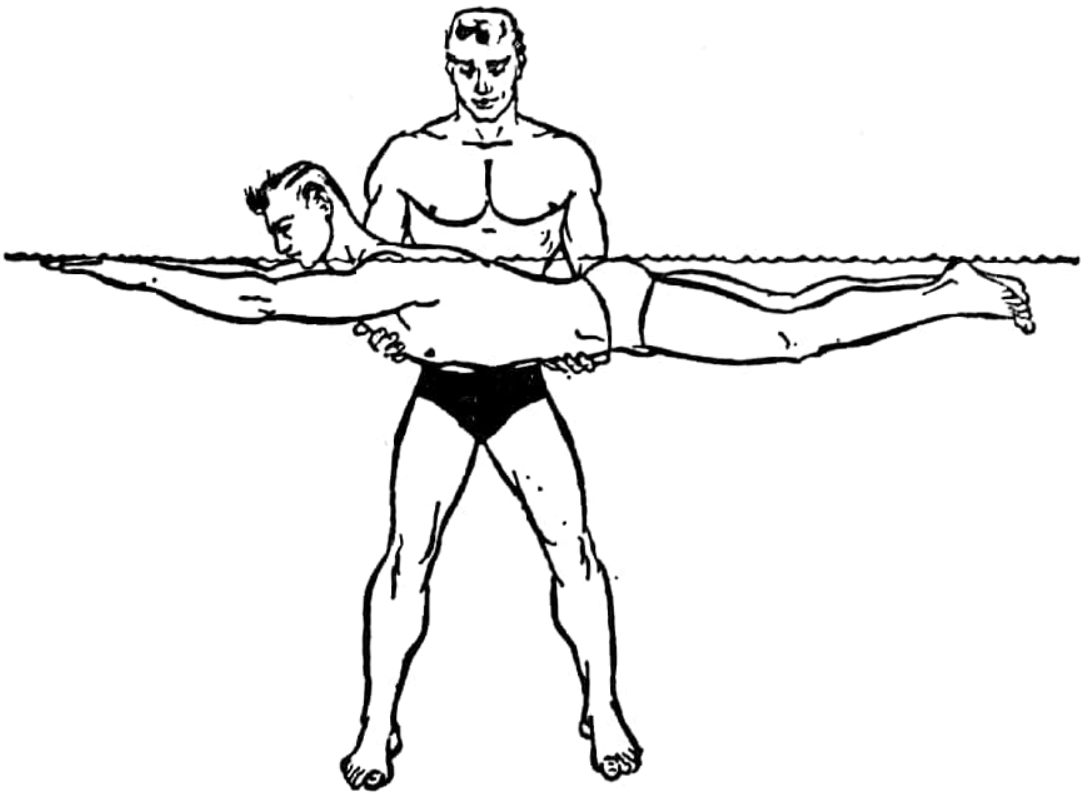

FIG. 12
Body Supporting Hold

taking your weight in a correct gliding position. (Fig. 12.) Release the rail and concentrate on *completely submerging* your arms, which were the only parts of your body not fully trained for gliding work through earlier practises. Lower your face into the water and, when you have full confidence in your partner, try your breathing exercises in this position. Remember to count to your own particular rhythm as follows.

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1. Inhale whilst counting up to three, four, or five according to preference.
2. Lower your head and exhale through the mouth and nose for a similar count.
3. Raise the head, inhale, and repeat.

At this stage, both you and your partner will have tried these practises, working as a team and learning a great deal about balance and buoyancy. Now is the time to try the previous breathing and prone position exercises whilst being supported

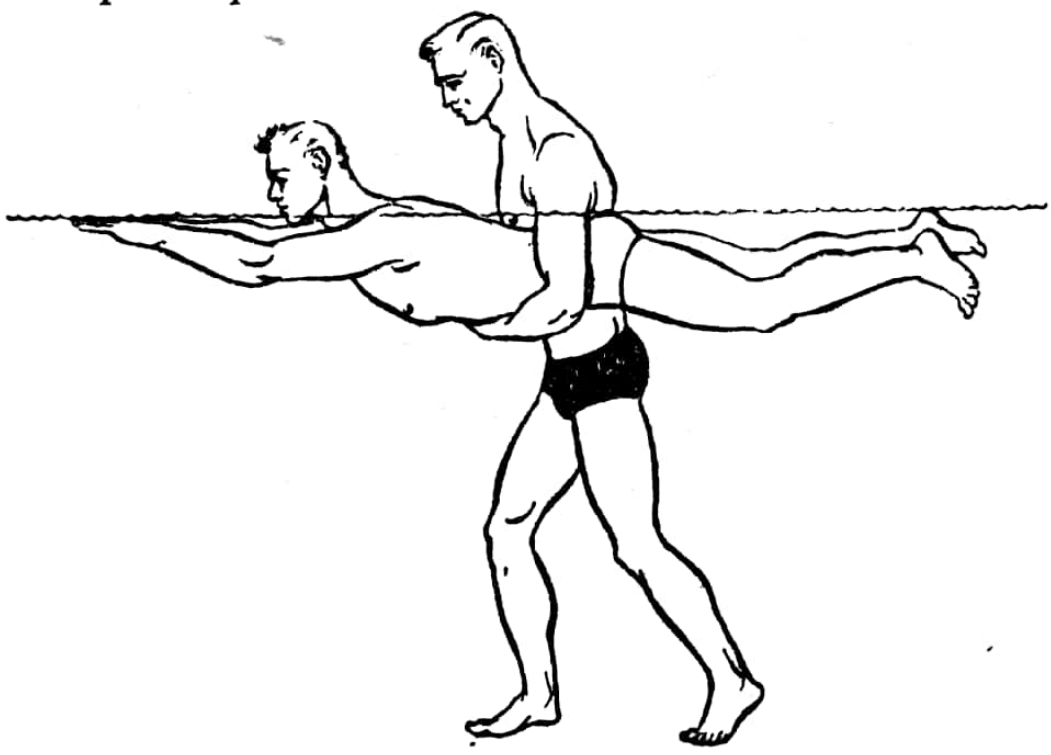

FIG. 13
Body Supporting Hold

only by a crooked arm about the waist. (Fig. 13.) This serves as a fulcrum upon which you must try to dispose your weight and is an excellent test of balance. An important aspect of this is for you to take a turn at supporting your partner in this way so that you will realise how very little weight is remaining to be supported when the body is in the correct prone floating or gliding

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position. This small weight represents the amount which is not naturally supported by the water itself, and it is this which the movements of swimming must actually overcome and support. It is not really much to ask, is it?

GLIDING FROM THE STEPS

When you have mastered the gliding positon and learned to work efficiently and confidenitly with your friend, it is time to try gliding from the steps.

Ask your partner to stand a few yards from the steps, facing you and with arms outstretched towards you. Seat yourself on the third or fourth step so that your shoulders are submerged and your feet comfortably and firmly placed on the steps further down, or even perhaps on the bottom. Keep the shoulders submerged and bring your hands up under the chin, arms crooked and palms downwards, with the thumbs close together. Now lean forward and as you feel your weight coming on to the feet push firmly off the steps, but be sure to push *forward*, not upward, and *do not* jump. As you push off, straighten your arms in front of you as if blowing your hands forward, easily. You will glide in the correct position to the waiting arms of your friend, who will help you to regain the standing position. Remember to keep your eyes open throughout and, if the distance is not too great, you can keep your head up with your mouth tightly closed in order to see clearly where you are going and to assess how long it takes to get there. Practise both with your head up and down, especially when you have the "feel" of things. When you are working with head down you can rely on your friend to

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grasp your hands, and the moment you feel this support you can safely raise your head to inhale and stand up.

FIG. 14
Gliding

GLIDING FROM THE BATH SIDE. (Fig. 14.)

This seems very similar to working from the steps, but it involves a *firm* push off from the bath side and is actually rather more difficult, though just as safe with the aid of your assistant. Once again, face your friend, who should be not too far distant; you can better judge how far this should be if you have practised from the steps several times.

Place one foot squarely on the wall behind you, assume the starting position with shoulders submerged and hands on the chest, arms crooked and palms down, and then inhale strongly. Now give a gentle push *up* from the bottom of the bath . . . gentle because you do not want to break the surface with your shoulders, merely to support your weight momentarily whilst you put both feet against the wall behind, lower your head, and give a strong push off towards your friend. Try this exercise with face submerged and also with the head up, and practise again and again until you feel perfectly confident about how it is done. Your friend, too, will probably take his turn, and you can see just how far it is possible to glide to the hands of your partner, perhaps having a friendly competition between the two of you.

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GLIDING WITH A CORK

You will certainly have found gliding a most satisfying sensation, marred only by the fact that it is not as independent as you might wish because you have always to rely on the services of a friend to help you stand up afterwards. With a cork float or a large rubber ball, gliding is quite easy, and this is the next step in achieving complete independence. Cork floats can usually be obtained from the baths attendant on request, but do remember that, once given a float, you must *never* attempt to *jump* into water from the side whilst holding it. If you did so you would get a very unpleasant shock when the cork struck you forcibly under the chin as it hit the water.

A cork will support your head above water whilst you glide, but only if you hold it properly. It cannot be expected to support your arms as well, so see that you hold the cork at arms length, your arms well submerged and your hands grasping the cork about three-quarters of the way along its length (the short sides should be towards you and the long ones parallel to your arms). If you now tilt the cork at an angle of about thirty degrees to the water, it will support you effectively. As soon as you have discovered how

FIG. 15
Using the Cork

best to hold the cork (Fig. 15), stand at the bath side and push off as before, this time holding

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your head up with the cork at arms length in front of you. Do *not* try to push *down* upon the cork, simply hold it firmly but lightly and at arms length, with arms submerged; it will just provide sufficient buoyancy to support your head above the surface throughout the glide. Perhaps you will feel happier to have your partner standing by in the usual position at first, but aim to dispense with him now, except as a companion in the water.

With sufficient practise you will soon find yourself gliding halfway across the bath with nothing but the cork to help you. Now is the time to review

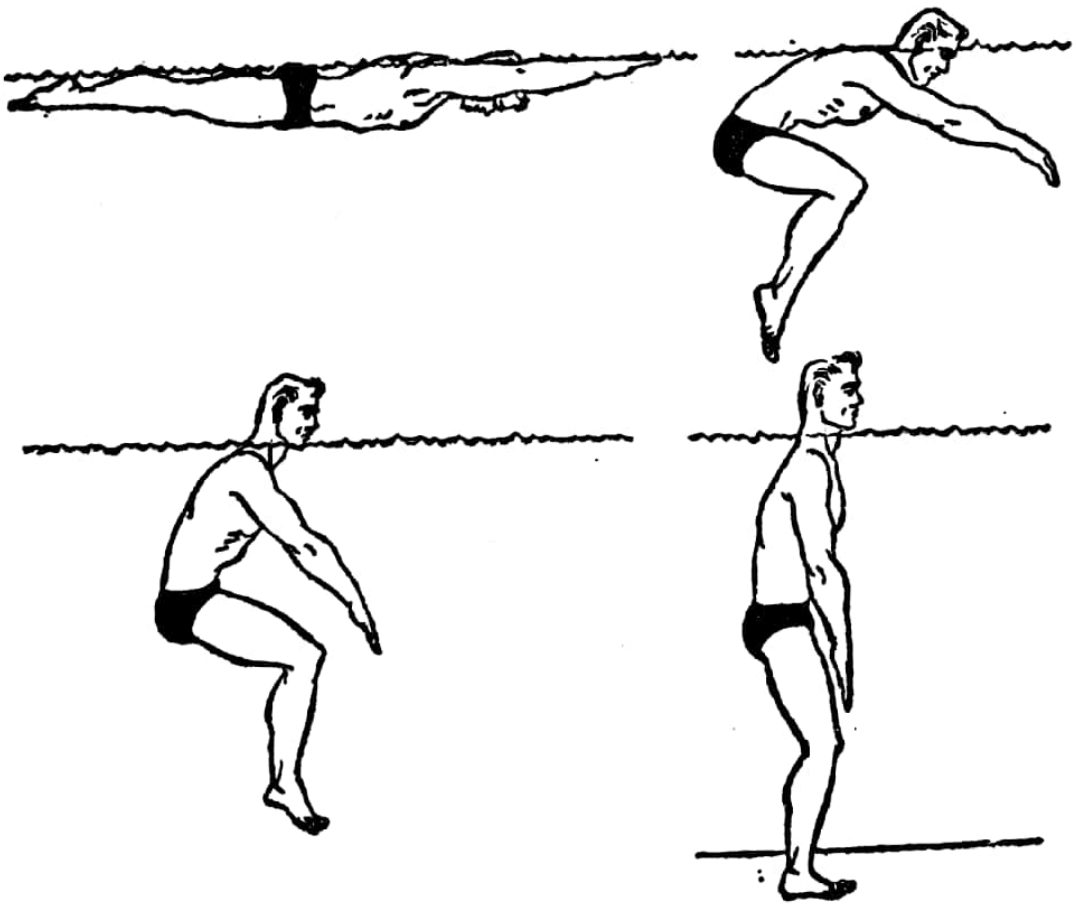

FIG. 16
Standing from the Glide
or Prone Float

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B. A. Mujahid Baluch. P.T.S.
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your gliding position and correct any mistakes which may have crept into your style. Remember above all to be relaxed, and very soon you will make that very important step in your swimming career—dispensing with the cork itself! But first you must learn how to regain the standing position from the glide.

STANDING FROM THE GLIDE

At the end of your next glide with the cork float, lift your head back and at the same time tuck your knees up under the body. A very slight additional pressure on the cork may be needed at first. You are now in a position to stand up if you simply lower your legs to the bottom of the bath. Once you have accomplished this a few times you can try it without the cork. (Fig. 16.)

Start the glide from the bath side, and carefully check that your gliding position is correct with head down and face submerged. Again you may have your friend standing by for the first attempt, but you will not need him. At the end of the glide, throw your head back, tuck in the knees, and straighten the legs to stand up! Now do it again and again until you are perfectly happy about it, —even if you make a bit of a splash at first. At last you are completely independent of your partner and the cork, and you can glide freely at any time in the secure knowledge that you may stand safely whenever you wish. Now practise to see how far across the bath you can get on a glide without any assistance. Hold your breath and watch those tiles on the bottom slipping by. Stand up only when you are sure that forward movement has ceased.

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THE FIRST FEW STROKES

It has probably occurred to you that you might increase the distance of your glide if you could only add a little forward motion to your body by kicking with your legs or hands. Now is the time to try this. Use the hands first. At the end of the glide raise your head, take a deep breath, and try imitating a dog paddle with your arms. Push one arm out and then the other, alternately pushing it out and pulling it back into the chest. You will certainly find yourself making some small progress as well as supporting your head enough to allow you a gulp of air occasionally.

Unfortunately, your legs will soon begin to sink, but not before you have achieved your first few swimming strokes.

The next problem is to prevent the legs from sinking, and this can be achieved by a "running on the spot" motion which in conjunction with your hand-paddling not only keeps your legs from sinking, but assists in forward motion as well. Remember not to bend your knees too much and you will find to your delight that you are paddling just like the dog you sought to imitate.

THE DOG PADDLE

This primitive stroke is enough to keep you afloat and moving, but it is very slow, and very tiring. It must now be refined into a proper dog paddle which can be a lazy-looking, rhythmic movement enabling you to swim more effectively without tiring so quickly.

This requires practise and the leg and arm movements must be practised separately until some degree of efficiency is achieved. Grip the

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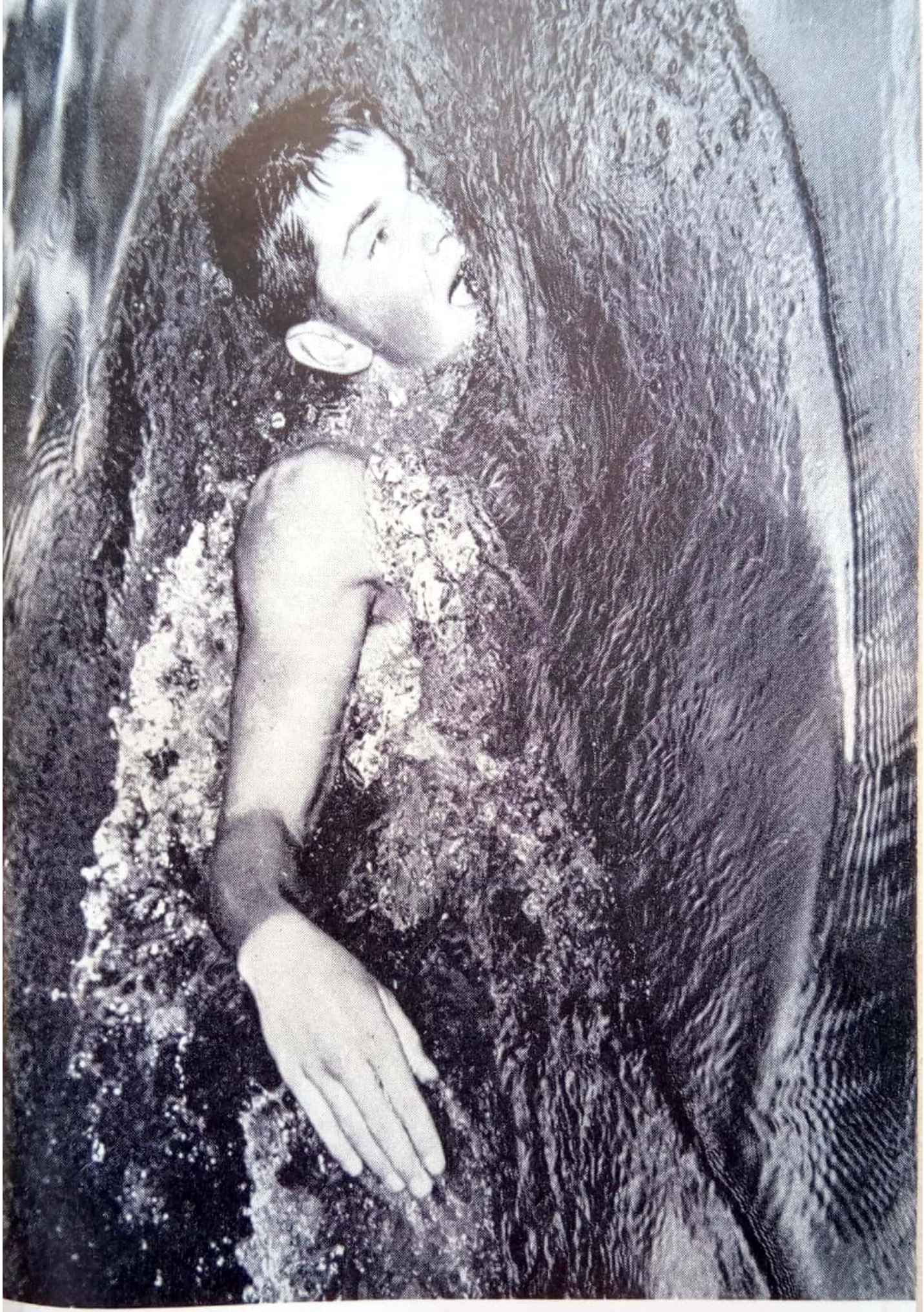

Jon Konrads, Australia's wonder 15 year old swimmer.

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Miss Dawn Frazer swimming the Butterfly Stroke.

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rail with an under grip, wrists below the bar, and forearms pressing against the wall.

Now extend your legs straight out along the surface and begin working them alternately up and down. Take care that the movement comes from the hips. Do not allow the feet to break surface, and do not allow them to sink too deep. The upward stroke is firm, and the down stroke easy. Contrary to expectations, you will find the legs tending to sink on the down stroke almost by themselves. If you overdo this part of the stroke they will sink too far. Try to keep both feet within six or seven inches of the surface, and take a slow easy rhythm. After a little practise you will overcome the tendency for the legs to sink and you will find yourself able to support your body with a very light grip on the rail.

To practice the arm stroke you should walk along the bath paddling with the arms. Try to lengthen and smooth out the paddling motion. Drive the arm forward parallel to the surface, and sweep it back, pulling at the water with cupped hands as if to sweep water behind you.

After some practise you should combine these arm and leg strokes, starting from a glide. You will find your dog paddle very much improved. However, the stroke is still comparatively tiring and sooner or later you will be very conscious of your breathing, which is irregular and therefore interferes with the smooth rhythm of the strokes.

CORRECT BREATHING

This has already been stressed as an introductory activity and it must now be applied to your stroke so that you make most use of the buoyancy which a lungful of air can give, and at the same time

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synchronise your breathing smoothly with your movements. This alone will give a very much smoother and less tiring drive.

To do this, inhale on your left-arm stroke, and exhale on the right. Inhale through a wide open mouth, and exhale strongly through nose and mouth at the right-arm-pull. Avoid turning the head, but content yourself with allowing your chin to sink slightly during exhalation, and lift it high during inhalation.

If breathing in co-ordination with your strokes gives any great difficulty, try it whilst standing with shoulders immersed at the bath side, performing the necessary arm strokes and breathing in rhythm. Better still, try it at home between visits to the baths, either when in your bath or with the aid of a large bowl of water.

Chapter II

THE VARIOUS CRAWL STROKES

The front crawl is a natural development from the dog paddle, and it is surprisingly easy to learn once the beginner has gained the tremendous boost in confidence which comes from being able to support himself in the water—however slowly he swims.

Success in correct and efficient crawl strokes depends very much on thought, determined practise, a careful analysis of mistakes, and the correction of faults as soon as they become noticeable. Such care and attention to detail is very well worth while because the crawl is an excellent stroke for every purpose—perhaps at its very best in really fast swimming for competitive work. Do

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not, however, let this highly exacting and exhausting aspect of the stroke delude you into imagining that it cannot be performed comfortably at moderate speeds.

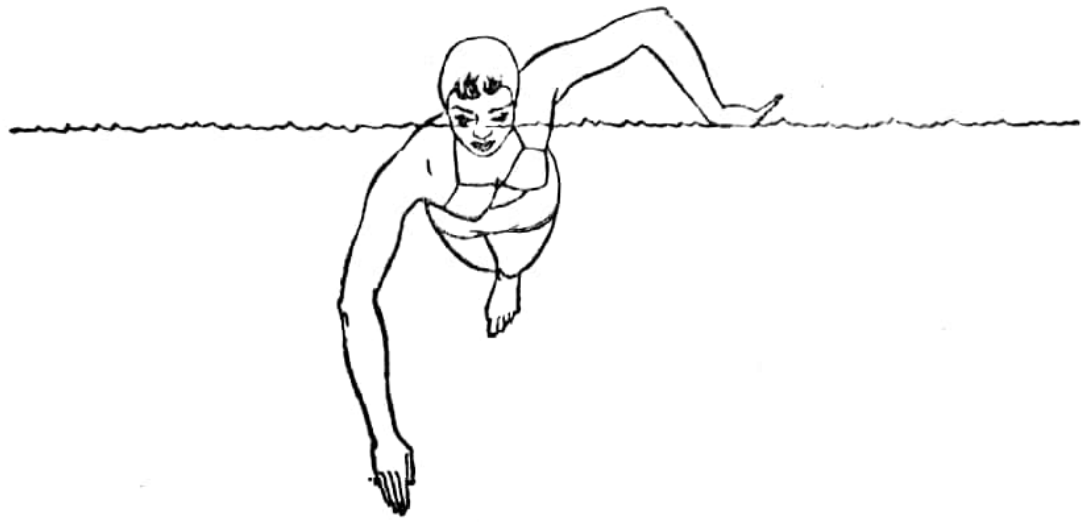

FIG. 17
Front Crawl

You have only to look at the pool, where you cannot help noticing that as well as the experts, thrashing along at great speed, there are many who appear to be crawling quite literally . . . their legs trailing uselessly behind them and their bodies rolling clumsily from side to side as their arms do all the work. This surely emphasises the supreme importance of developing an effective and efficient leg action,—which simply *must* be mastered before you can really expect to take your place alongside the real swimmers. Once this *is* mastered, however, it instantly gives access to other crawl strokes which depend on a very similar leg action.

If you have already practised your dog paddle leg action properly you have established a very suitable basis upon which to work. But, before you dash off for a cork float to thrash your way across the pool on leg action only, return to the

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rail, think very seriously about this leg work, and practise further until you have the "feel" of the stroke.

LEG ACTION: FRONT CRAWL

Begin with the legs perfectly straight, and side by side, as you grip the rail to support your head. Now allow one leg to sink under its own weight. Lift it again *without* bending the knee, working from the hip, and keeping your foot stretched with toes pointing backward and soles up. As you retrieve one leg let the other sink under its own weight. Retrieve this, bearing in mind the points mentioned, and then repeat the cycle very slowly, making each movement a conscious one and studying to move the legs from the waist without any knee bend.

Imagine a line continuing from the line of your spine down between your feet and legs. Move your legs up and down slowly on either side of this imaginary line, and keep as close to it as possible.

This is very tiring at first, and that beautiful "fishtail" action, which all the experts seem to do so effortlessly, seems a long way off. Only really dogged and determined practise can bring such perfection—but every leg movement you make correctly is a short step towards it.

Keep the legs moving slowly and gently up and down and think only about moving from the hips. When you feel happy about this you can now allow the legs to bend a trifle at the knee on the *down* stroke, but make sure that you straighten them again on the return stroke. This must become automatic, and practise will make it so. If you feel disappointed remember that you

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never really thought you would ever learn to ride a bicycle or kick a football the first time you tried. Swimming is much the same: practise brings ease and confidence until you wonder what on earth you were so worried about.

The next step towards a correct stroke is to forget about your feet. In order to achieve that effortless fish-tail effect it is essential that your feet flap loosely up and down from the ankle, just as if they were "switched off" from the controlling muscles of the rest of the body. Curiously enough, it takes will-power and thought to learn how to forget about them, but again this comes with practise.

It helps if you try practising the ankle movement only for a short spell. Stretch out the legs and move your feet only, from the ankles. When you get the "feel" of this movement, practise the complete stroke again and try to get your feet flapping about on the ends of your legs.

Now you can begin to increase the speed of oscillation, but avoid shortening the length of the kick. Think of that imaginary line again and drive your legs each side of it whilst counting to yourself: one . . . two . . . three . . . one . . . two . . . three . . . etc. Persist until you feel the rhythm of the stroke taking over automatically. When you can do it easily without having to think carefully about it you should try it out with the cork float.

Hold the cork tilted at arms length, remember to keep your arms submerged, then push off the side into a long glide. Before the glide has ceased begin the proper leg action. *Drive* from the *hips*, bend the knees slightly *only on the recovery*, and flap the ankles. The legs should sink no more than

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about 16 inches. Move the legs smoothly and alternately with only the heels breaking surface. Do not worry too much about speed because the stroke will still seem tiring. Aim at purposeful movement which carries you forward. After some practise you will suddenly become conscious of that fish tail action in *your* legs and each successive practise with the float will bring quality of movement and greater efficiency. Each time you visit the baths, set aside a short period for working with the float in the manner described. Each time endeavour to increase the distance covered until you can manage about 200 yards without feeling unduly tired or distressed. At this point you can dispense with the float and use the dog paddle arm stroke together with the leg thrash, and are ready to begin a careful examination of the arm work—which you might have practised separately when you were perfecting the leg stroke.

THE FRONT CRAWL ARM STROKE

The land practises—which can be carried out at home, a little every night before retiring to bed—need not wait until the perfect leg stroke is performed. Once you start getting the "fish tail" effect of the leg work, the arm work can begin. The main point is to keep the two activities quite separate at this stage, without attempting to combine them until the leg work is really good.

1. Stand facing a mirror, with the right leg forward, knee slightly bent, and the trunk leaning slightly forward from the hips.
2. Place the left hand on the right knee, and extend the right arm forward level with the shoulder and with the elbow slightly bent. The

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palm should face down with fingers together and the hand should be in line with the fore-arm. This is the position of the arm as it must enter the water. Examine it critically in the mirror.

3. Move the arm downwards, at the same time straightening the elbow somewhat. Continue the movement down and back until the hand is at thigh level.

4. As the hand reaches the thigh, bend the elbow and raise it until the hand and fore-arm hang clear of the shoulder.

5. Now carry the arm smoothly forward again to the "entry" position just in front of the shoulder line.

Repeat the cycle several times with the same arm, keeping the other arm still, the hand resting on the knee. Concentrate on holding the pulling and pushing movements within the shoulder line, but never far enough under the body to pass the centre line of the body.

Once you have established the feel of this movement try it with the opposite arm. When confident that both arms know what to do, use them both alternately in co-ordinated movement. In action, one arm is always pulling as the other is recovering over the water (or, in the land drill, pushing).

Now try leaning forward from the hips towards the mirror whilst practising the stroke. Make sure you can actually see every part of the upper body. Hold the shoulders square, head up, and watch yourself performing the movements, aiming at completely symmetrical movement of the arms, and avoiding undue rolling at the shoulders.

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BREATHING CO-ORDINATION

Once in the water you will find this absolutely essential so it is urgent that it should be practised on land, preferably in front of a mirror.

Start in the original position with the right arm at entry and looking straight ahead.

1. Press the right arm down and back, the hand to thigh level.
2. Raise the elbow and at the same time turn the head smoothly to the left, without moving the shoulders, and inhale through a wide open mouth.
3. Carry the right arm forward to the entry position and at the same time smoothly turn the head to the front again, breathing out easily through the nose and mouth. During this time, the movements of the left arm will have been carried out automatically.

It is just possible that some people prefer to carry out their breathing on the opposite side to that described, in which case the movements are similar, but will be synchronised on the movements of the left arm and not the right. It is up to the swimmer himself to decide which side is preferable.

WATER DRILLS. ARM STROKES FOR FRONT CRAWL

You have no mirror now, and must perfect these strokes whilst standing in the water up to your shoulders, and walking easily forward as you get the feel of the synchronised arm strokes and breathing. To begin with, make all movements deliberate and slow, only speeding up when you have got the full cycle working smoothly at slow speeds. It might be worth your while to try the

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arm movements separately first in the water to get the sense of water pushing on various parts of the arm, and to adjust your land drills to the pressure of the water on your limbs as you move them, and to the actual water level.

Stand in the entry position with your hand roughly in line with a position midway between the nose and shoulders, and straight out in front of you. After entry, straighten the arm slightly and feel the water swirling against your arm as it moves downwards and back to hip level. Keep the pull inside the shoulder line, bend the elbow, and point this upwards until the hand is hanging clear of the surface when it is carried forward to the entry position again. Practise this several times with both arms quite separately. Then combine the two arms in alternate synchronised movements. As soon as you have the feel of this stroke in the water, introduce breathing, too. Remember to sink your head for exhalations during this practise, and turn to one side to inhale. Make sure the head is turned independently of the shoulders.

COMBINING THE LEG AND ARM STROKES

You have by now already achieved a fairly strong leg action, and this must be combined with the arm stroke. (Fig. 18.) To simplify matters forget about breathing whilst you co-ordinate the limb strokes. Take a deep breath, and travel as far as you can with head down and submerged. Start from a strong glide again, take a deep breath, push off, and glide with the head submerged to about eyebrow level. Drive the legs steadily up and down and complete the arm strokes. You will find this very dis-jointed at first, especially

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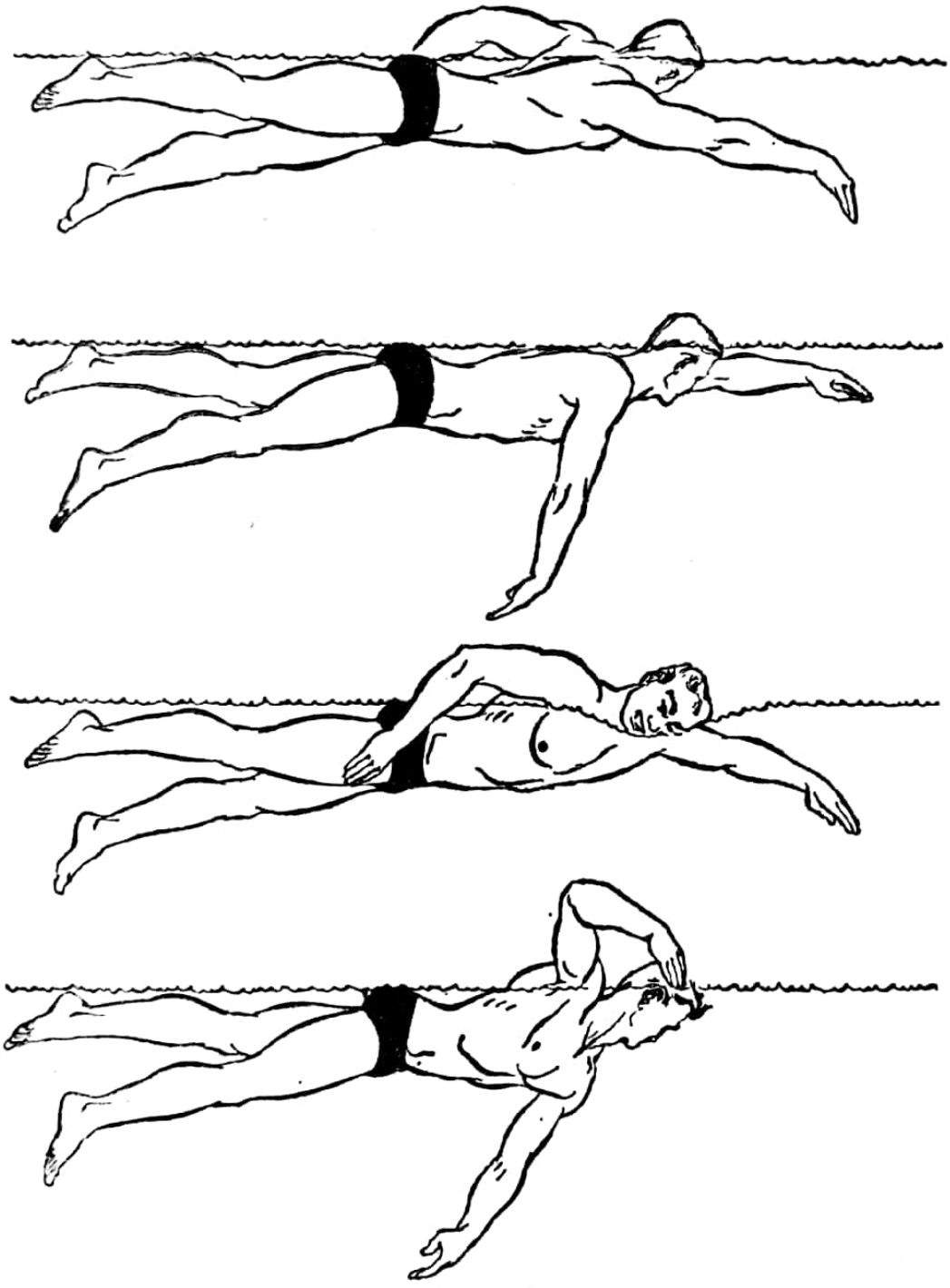

FIG. 18
The Front Crawl Strokes

as you cannot get far without breathing. Stick at it, however, even if you complete only two or three cycles of the stroke; rest for a breather in between attempts, and then try to establish a rhythmic connection between the arm and leg

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strokes. Count up to three for each arm movement and aim at completing three leg movements during this time: that is, six leg movements for each complete arm cycle. Soon, with regular attempts at smoothing out the rhythm, and regular rests for a breather, the pieces of the jig saw puzzle will fit together and your only problem will be to deal with controlled breathing.

Introduce breathing on the same rhythmic basis to a count of three for each arm stroke, and accompanied by three leg strokes. As soon as your breathing routine is established you can concentrate on smoothing off the stroke at leisure. It is bound to be ragged at first, and will probably be fairly slow (you will be wise not to rush it). Now keep practising, and searching for faults. Read the cycle of movements through before and after each days work and review your strokes for faults.

FAULTS TO LOOK FOR

1. *Excessive rolling.* This may arise from a variety of causes and you must search your style to find which one is responsible. It may be a combination of several.

Rolling can be caused by breathing on the wrong side. If you are a natural "left hander" you may find the other side better for breathing. Try both and establish which is the better. Another common cause of excessive rolling is the tendency for beginners to *lift* the head for breathing instead of simply *turning* it. Aim at keeping your head submerged at about eye level and *turn* it to breathe. Even during exhalation you should just be able to see along the surface; there is no necessity to bury the head in the water.

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You may be over-reaching at the beginning of the stroke, another fault which will cause rolling. Make sure that your arm is *slightly* bent at the reaching part of the stroke and you will probably overcome the fault. At the moment of entry, the arm must be bent with the hand below the elbow.

A poor or irregular leg drive can also cause rolling, and nothing but plenty of practise with the cork can correct this. Finally, you may be pulling your arms too deep in the water and this, too, may cause you to roll. Look for all these faults, try to eradicate them by the methods suggested and you should cure the worst of your rolling.

Other faults to look for are excessive splashing and undue tiring due to bad breathing. Splashing may be the result of too much knee bend, or too shallow a leg stroke, or even to the head being too low in the water. Once these parts of the stroke are tested consciously you will soon establish which causes the splashing. For breathing faults, more practise and a careful review of your breathing rhythm will probably improve your performance.

BACK GLIDING

Just as all front strokes are basically built up on the prone glide position learned earlier, so do back strokes depend on the ability to perform the back glide in the supine position. This alone would justify learning the back glide, but when it is considered that supine floating also depends on this, and this is the best possible method of floating because it permits free breathing, it is immediately obvious that the back glide is a vitally important thing to master. For a swimmer in difficulties with cramp, or even simply tired,

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it represents a valuable life-saving position of comparative rest, *and* it is also invaluable in the acquiring of many new skills.

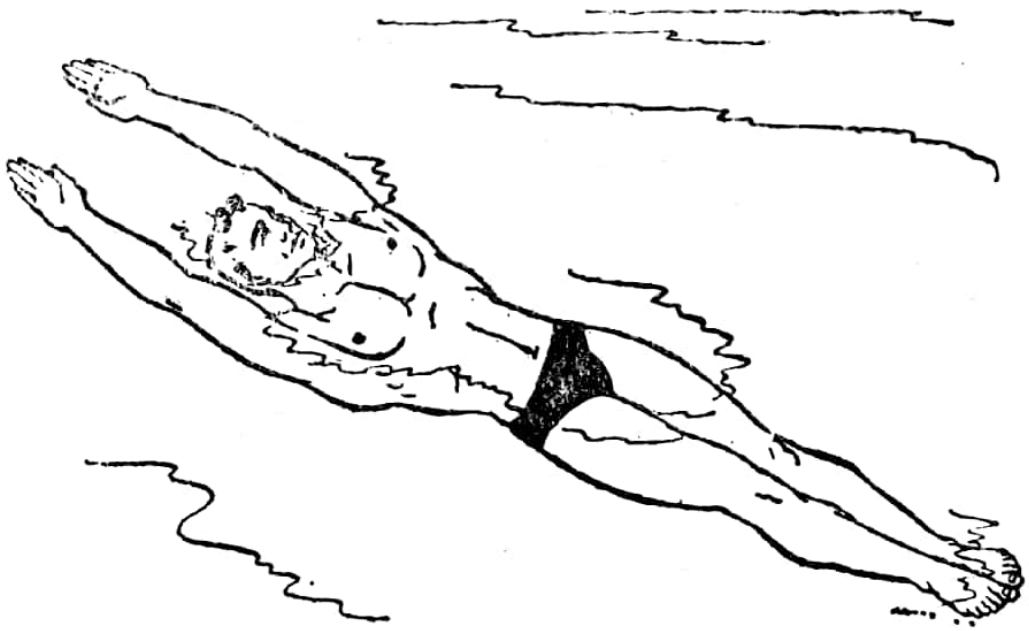

FIG. 19
Back Floating or Supine Gliding

THE BACK GLIDE POSITION

The body is stretched along the surface in a line with the legs side by side, toes pointing, and soles towards the bottom of the bath. The chin is tucked slightly so that the eyes are looking towards the feet, and the arms are side by side above the head with palms up and thumbs touching. (Fig. 19.)

Stand by the rail, gripping it with both hands at shoulder width apart. Place the feet side by side on the bath wall with the knees tucked between the arms. The head should be slightly forward. Get your friend to stand a few feet behind you ready to assist you to regain your feet at the end of the glide until you have learned how to do this yourself.

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Brace the legs firmly on the bath side, then in one movement release your hands from the rail, throwing your arms back over your head, and at the same time push hard with your feet, straightening your legs and aligning your body in the back glide position described earlier. By the time you have got into position you will have glided smoothly into the waiting hands of your friend who will assist you to your feet. A few practise attempts in this way will enable you to judge how far you can comfortably glide, and give you time to get the full "feel" of the body position. Probably, too, you will find that after the first splash of the push-off, your head is floating with the face free, and normal breathing is possible. This should encourage you to try some really long glides, perhaps with your partner walking by your side ready to help you up.

STANDING UP FROM THE BACK GLIDE

Try again with your friend ready to assist you lest you require him, but try to reach your feet alone. At the end of your glide bring your head well forward, draw up your knees, and sweep your arms around to your sides. This will bring your trunk roughly vertical and into position for simply stretching your legs down to find the bottom with your feet. (Fig. 20.) Practise this until you can do it without even asking your friend to be nearby.

HAND SCULLING

This is a very short step from the glide itself, but it is extremely important because it enables you to float freely on your back, fully controlling movement with your hands only. For the tired

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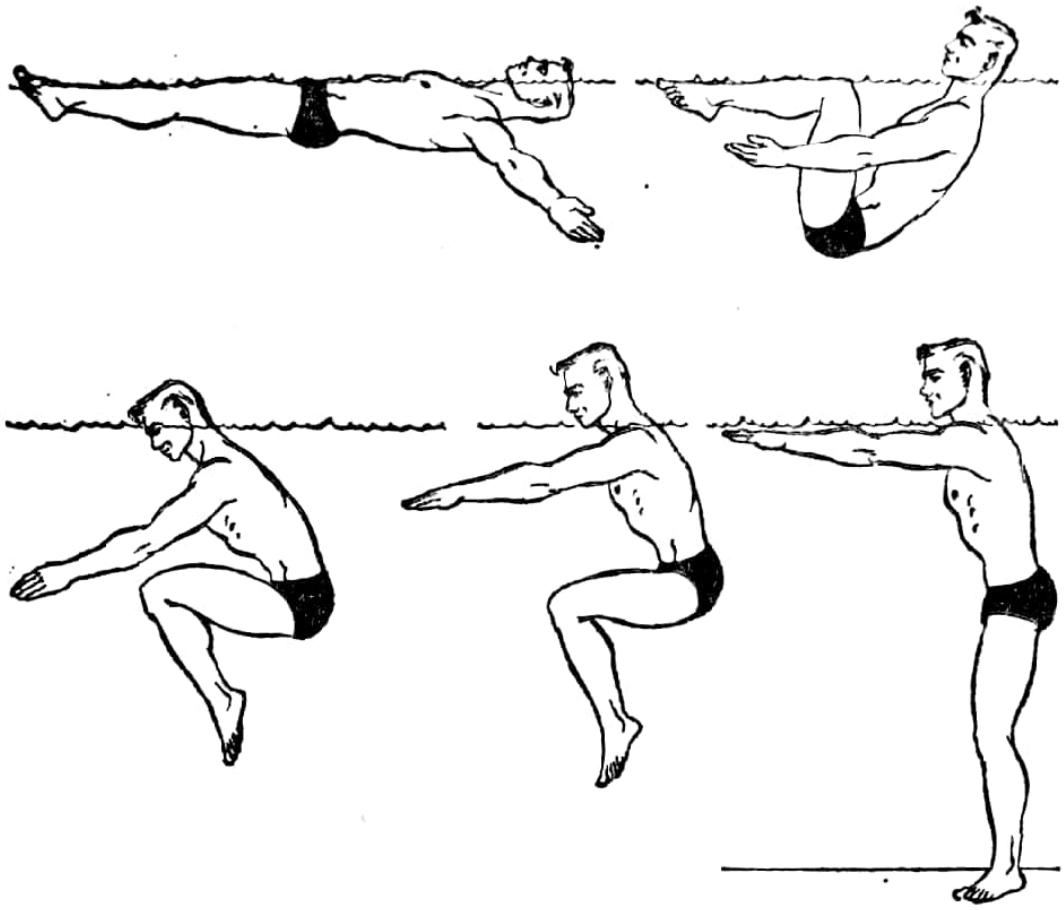

FIG. 20
Standing from the Back Float

swimmer, or whilst resting a cramped limb, it is supremely important, and for general watermanship it is a step towards being completely at home in the water. It can be accompanied by a paddling leg action, or is sufficient to propel the body without leg work at all.

To practise this, tuck your toes under the rail whilst holding on with your hands, then release the hand grip and gently unroll the body to lie flat on the surface, just holding lightly on the rail with the toes. Keep your arms at your sides and try this sculling action.

1. Hands about 8 ins, from the sides, palms facing outwards and thumbs down. Hands semi-cupped, arms straight and wrists relaxed.

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2. Turn the wrist so that the thumbs are upwards, at the same time pressing your hands in towards the sides.
3. Return to the starting positon.

Remember that this movement is primarily a wrist action supported by a light pushing with the hands. When you can feel it exerting pressure on your toes at the rail you will know it is propelling you through the water. Release your toe grip and scull gently away from the rail. Soon you will begin to appreciate that by slight variations in the hand movements you can turn your body in either direction. This is a very satisfying and pleasing movement once it is understood, and it can be assisted by a gentle paddle or thrashing action of the legs if desired. This considerably increases the power of the stroke.

THE BACK CRAWL

From the easy paddle-like relaxed action of back glide sculling, it is an exciting change to the powerful speedy back crawl, a stroke which has a decided appeal to many swimmers because the mouth is clear of the water practically at all times and this allows easy breathing. (Fig. 21.)

As in the front crawl, the powerful and continuous leg drive is essential and to achieve this your ability to scull on your back will be of tremendous help. This enables you to concentrate entirely on your leg drive.

1. Push off from the side as usual, and scull gently along on the back. Slowly lower the right leg from the hip, at the same time bending the knee slightly. Feel the pressure of the water on the sole of the foot, which should reach a depth of between 6 and 16 inches.

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Brian Phelps Diving.

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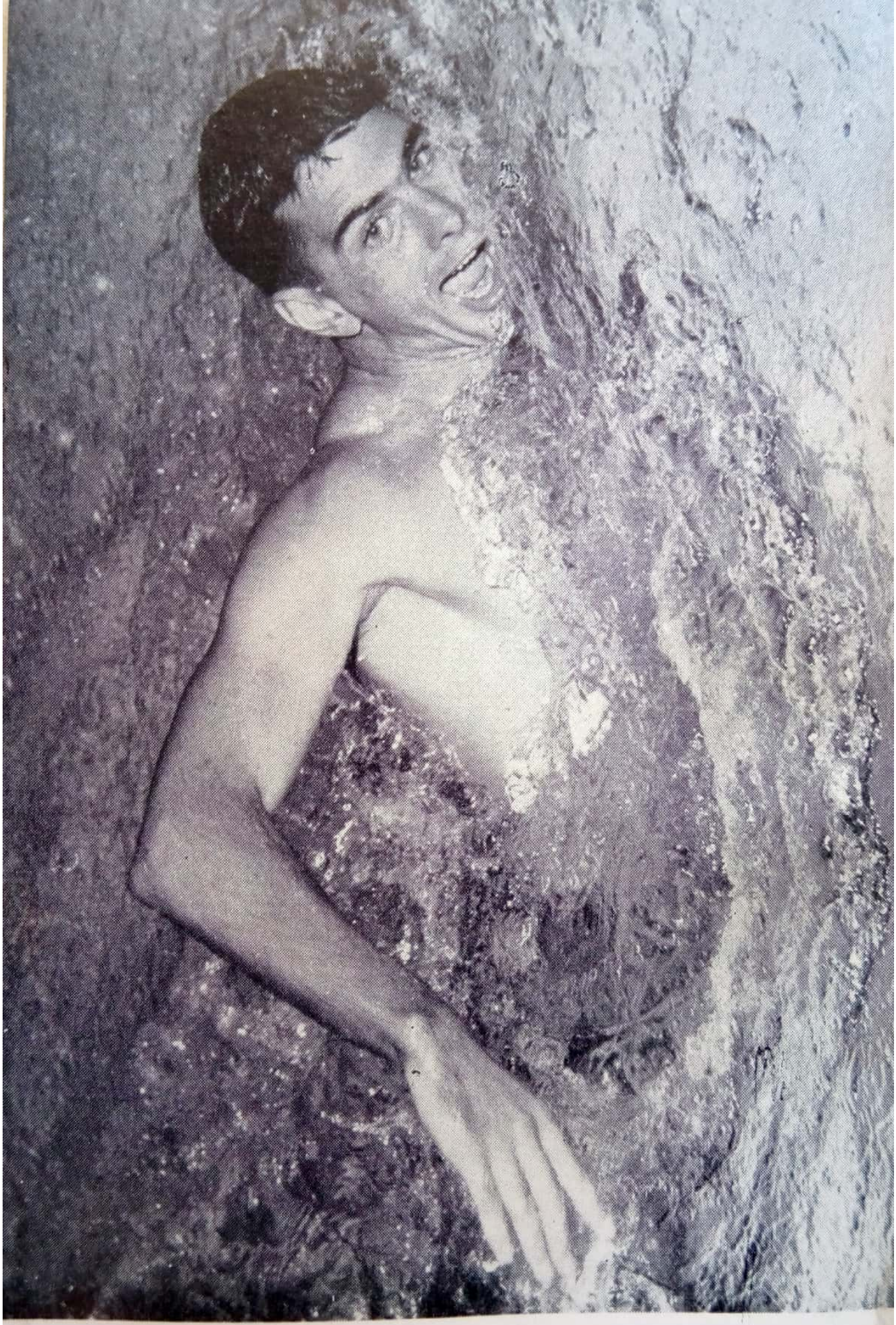

John Devitt, Australian swimming champion
in 110 yards freestyle.

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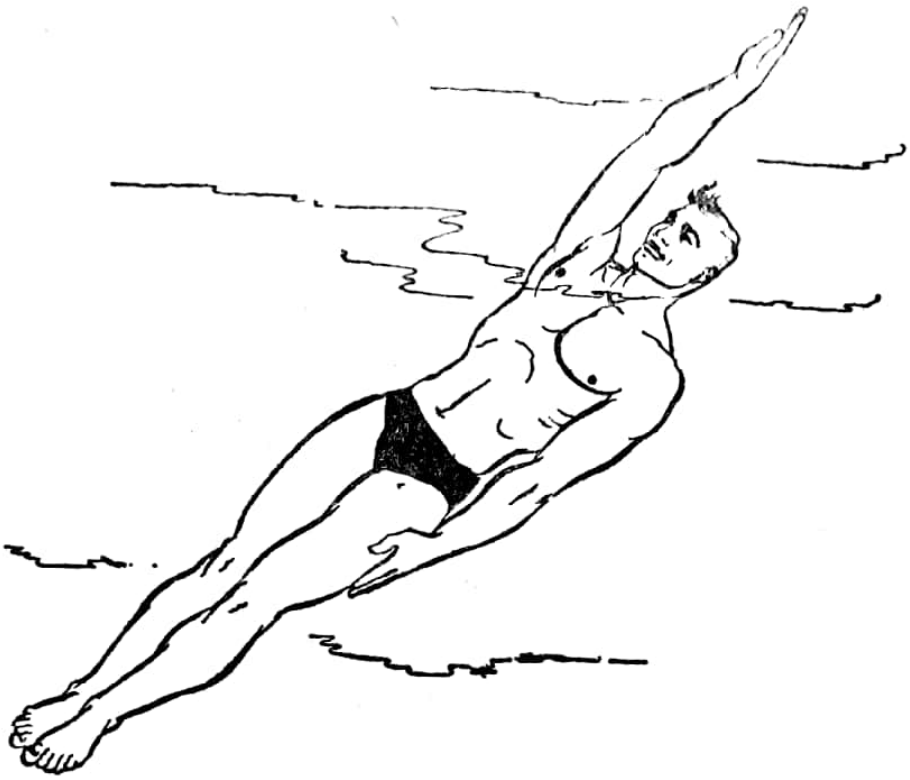

FIG. 21
Back Crawl

2. Raising the leg up again, straighten the knee and extend the foot. This time you should feel water pressing on the instep. Simultaneously with commencing this movement you must lower the other leg as in 1. and proceed continuously with the cycle of movement.

This alternate leg action must not be confused with that of the front crawl to which it is similar, but with important differences which will soon be recognised. During early attempts, work to a rhythmic count of two, and make sure that the leg is straight, but not stiff, when the toes break surface. Keep the knees submerged at all times. When you have the general "feel" of the stroke concentrate on allowing plenty of play at the ankles.

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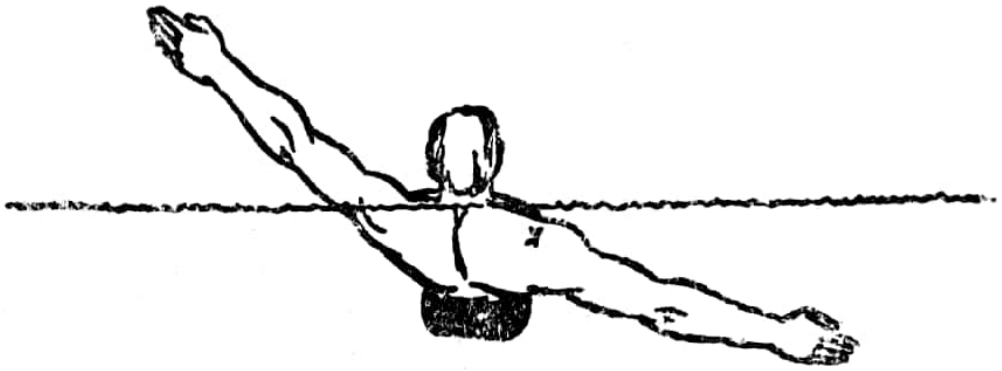

FIG. 22
Back Crawl

ARM MOVEMENTS, BACK CRAWL. LAND DRILL

Practise this at home in front of your mirror. This can be done during the period when you are still developing the leg action. Begin with the arms at the sides, palms facing the legs, and try only one arm at a time.

1. Lift the right arm from the leg. Allow only a very slight bend at the elbow, and draw a semi-circle in front of you with the shoulder as centre, and in a plane at right angles to your chest. As the hand leaves the thigh, turn it outward, swinging it to a comfortable position just outside the shoulder line above your head.
2. Now steadily pull the straight arm directly to the thigh, bending the elbow slightly.

Try this with the other arm, and then combine the movements, alternately using both arms. As one arm begins to pull the other should be lifted from the thigh. Maintain a steady continuous rhythm.

Although the mouth will in fact be free of the water controlled breathing is still essential so inhale as the right arm is lifted, and exhale as

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the left arm comes up. Once you are in the water (Fig. 22), you will find that water running down your arm may tend to interfere with your breathing at first and this is all the more reason for correctly synchronising it.

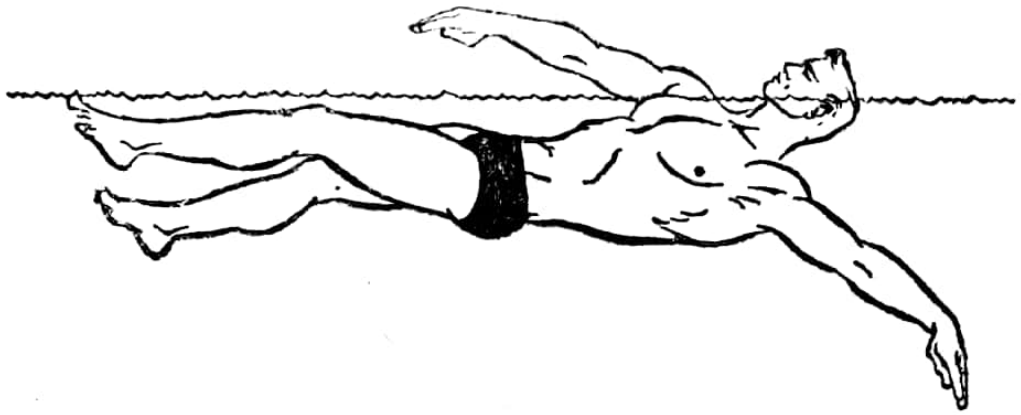

FIG. 23
Back Crawl

BACK CRAWL ARM STROKE. WATER DRILLS

Take up a position on your back with toes slightly gripping the rail. A friend may if necessary support you at the legs but he must be in a position out of the way of your arm movements. Bring the arms to the sides and hold the chin tucked in.

1. Lift the right arm (Fig. 23), turn the palm out, and swing it to the point of entry just wide of shoulder level above the head. Drop the hand at the wrist so that it meets the water squarely. Breathe in through the mouth as your hand leaves your side.

2. Pull the arm towards the thigh at a depth of not less than six inches, but do not pull too deep or the body will tend to roll, especially at the shoulders. Take the shortest possible pull to the thigh and, as the right arm begins this pull, swing out the left arm to the entry position whilst exhaling through the nose and mouth. (Fig. 24.)

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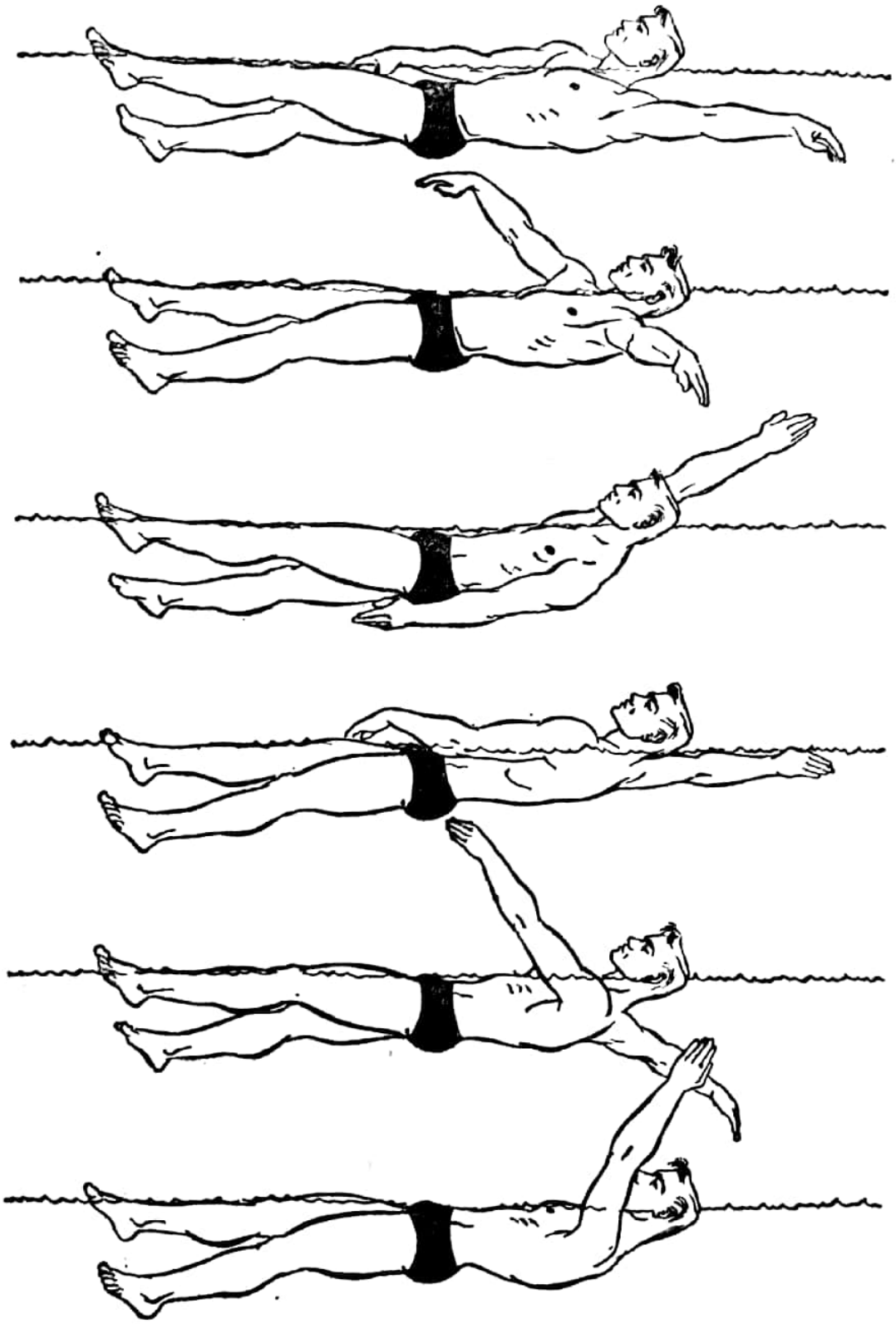

FIG. 24
The Back Crawl Strokes

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When this stroke seems really to be pulling you from the rail, release the toe grip and combine the arm and leg strokes. Eventually, you will find it best to develop a continuous leg kick isolated separately for each arm, counting three leg strokes to one arm stroke. Later, as the movements become integrated with each other, the leg beat will be more continuous and the whole stroke symmetrical.

Keep the body stretched along the surface with the head steady and eyes looking along the surface towards the feet. The head will act as a rudder and if you turn it irregularly to watch your arms you will find yourself swimming in a most erratic line. Only the toes should break surface; keep the knees submerged and be satisfied with fairly short hauls at each attempt. Now is the time to locate faults and correct them.

BREATHING DIFFICULTIES

Breathing problems may be caused if the body is too flat, or if the head is insufficiently tucked in at the chin so that the rush of water flows over the face instead of around it.

EXCESSIVE SPLASHING

Watch that your knees do not break surface and that the hips do not sink. Whilst your stroke is weak and giving little forward propulsion you may expect some splashing from the legs but as the stroke develops this should decrease. Lack of speed may be due to the leg action being too shallow and, therefore, ineffective.

ROLLING

This may be due to over-reaching with the arms, or to pulling too deep and rolling the

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shoulders. To correct deep pulling, stand about two feet from a wall, with your back to it, and practise the arms stroke. If your hands hit the wall behind you your pull is too deep. Practise until there is no danger of this and your rolling will cease as soon as you get back in the water.

Chapter III

THE BREAST STROKE AND ITS RECENT DEVELOPMENTS

Fashions in swimming, like fashions in all things, are subject to change, and tend to go in cycles. Not so very long ago it was firmly believed that the crawl was the best possible stroke for learner swimmers, especially by those who were interested primarily in the competitive aspects of the sport. Then it dawned somewhat slowly upon the physical educationists that once the crawl was established in a swimmer he seldom bothered to learn the breast stroke at all, considering the fast and spectacular crawl sufficient to all his requirements. Then the breast stroke became something of a rarity, until the vogue for under-water swimming became established with the advent of breathing apparatus, when the breast stroke again became something of a rage. The poor crawl swimmer had to learn his breast stroke all over again, until the advent of flippers put even the breast stroke in the shade for under-water work. Anyone who thinks about his swimming will realise that the wheel of fashion, both in the sporting and educational aspects of

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the sport, is very likely to turn full circle, especially, as so often happens, when a suitable gimmick falls into the hands of physical educationists.

The good, all-round swimmer therefore is not over-concerned about fashions which may well be outdated in a year or two. He seeks to be a good all-rounder, and, since the breast stroke is essential to under-water swimming in the ordinary way, it is a most important stroke. Some experts to-day consider that this stroke ought really to be learned before the crawl. Experts will argue for ever about which is the more natural. Every swimmer must decide these things for himself, and his decision should be made in the certain knowledge that in the field of life-saving, the breast stroke is equal to if not better than any other stroke for a swimmer tiring or in difficulties (when fashions suddenly lose their interest for him, and he is glad to avail himself of many changes of stroke). The breast stroke is then a restful means of propulsion capable of supporting even a mediocre swimmer for a considerable time, especially if this is combined with periods of rest on the back whilst floating or sculling.

This is, of course, far more important to the "pleasure swimmer" as opposed to the competitive swimmer. Swimming has many delightful facets, and the purely idle pleasure of drifting about in shallow water in the sunshine is one which must never be pushed into the back-ground in favour of purely fast swimming, a matter at which comparatively few people can excell. You will have derived considerable pleasure already from swimming the crawl. Be assured that considerably more awaits you with the breast-stroke, which is easier and more attractive.

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LAND DRILL

A great deal can be accomplished in establishing the rhythm of the co-ordinated strokes during land practise in between visits to the baths. It is important that the stroke is mastered before attempting to use it in the water.

ARM STROKES

1. Sit on the floor with the back by a wall. Extend the arms to shoulder level in front with palms down and thumbs touching.
1. Press the arms outward and slightly down about halfway between an "arms forward" and "arms sideways" position. The two arms should be roughly at right angles to each other and you should be able to see *both* arms *and* the finger tips of both hands without moving the eyes left or right.
3. Swing the hands to the chest, arms close in and elbows tucked. The hands should rest in a begging dog position just under the chin, with palms downward.
4. Extend the arms slowly forward to the starting position, at the same time slightly lowering the head forward.

Repeat the cycle until satisfied with the stroke.

THE LEG STROKE

1. Sit with legs extended and with your back to a wall.
2. Draw the feet up towards the buttocks with knees apart, heels together and toes pointing outwards. If necessary, lean back slightly on the wall to maintain balance.
3. Sweep the legs round together symmetrically in a continuous semi-circular movement as if to trace a "D" shape with the heels on the

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floor and back to the starting position. Repeat the cycle until it is understood.

Now it is necessary to combine these arm and leg movements in land drill, co-ordinating them also with the correct breathing techniques.

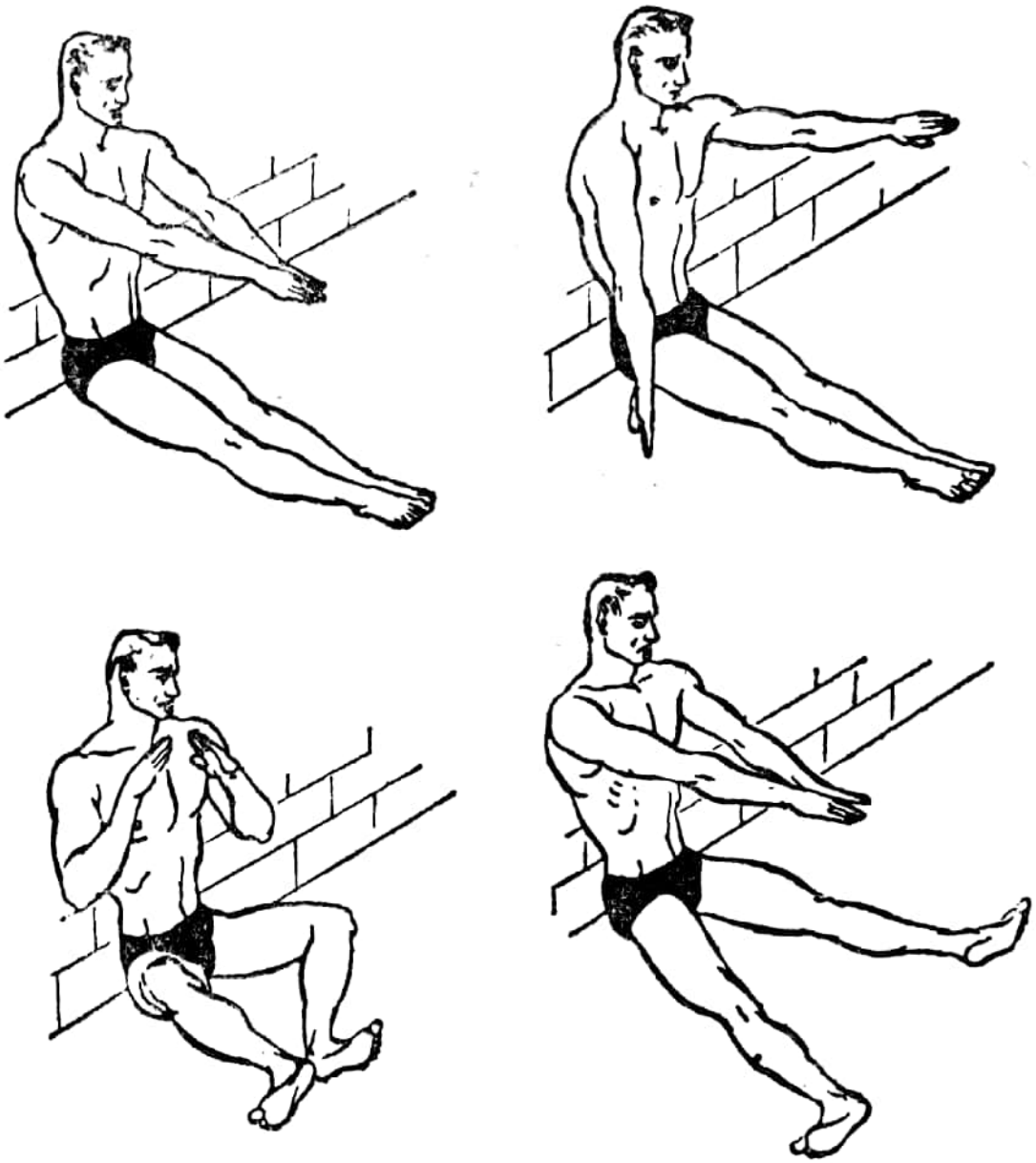

FIG. 25
Breast Stroke, Land Drill

LAND DRILL. BREAST STROKE (Fig. 25).

1. Seated against a wall with legs extended forward and together, the arms should be ex-

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tended forward with palms downward and thumbs touching. This is equivalent to a gliding position when in the water.

2. Press the arms sideways and slightly downward, lifting the head and inhaling deeply through the mouth. Keep the legs still.
3. Swing the arms in to the chest and draw the feet up to the buttocks with knees apart and feet pointing outward. Lower the head.
4. Kick the legs round and together, tracing a "D" shape on the floor with the heels. Simultaneously stretch the arms forward into the starting position, and at the same time exhale through the nose and mouth.
5. Pause in this position momentarily before resuming the cycle of movements.

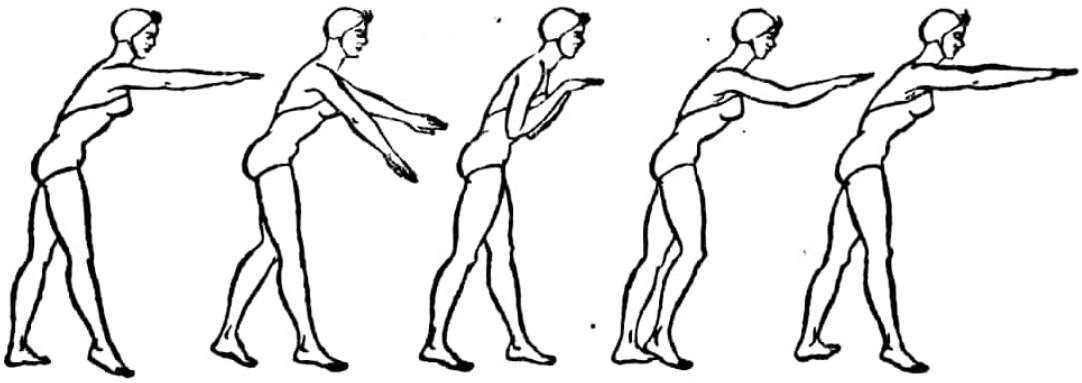

FIG. 26
Breast Stroke, Water Practise

BREAST STROKE. WATER DRILLS. ARMS

Stand in the water with shoulders submerged, knees slightly bent as necessary. Carry out the arm strokes whilst walking slowly forward remembering to observe the breathing procedure carefully, and actually immersing the mouth and nose during exhalation and raising the head for inhalations. (Fig. 26.)

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LEG STROKES

1. Undergrip the rail and stretch the legs back, side by side. Ask a friend to hold your ankles
2. Bend the knees so that the heels touch and the knees and feet point sideways.
3. Ask your friend to take your ankles and sweep the feet around in a semi-circular movement as if drawing a "D" shape with each leg, symmetrically, and without any pause. The legs should finish at the end of the stroke with knees straight, toes pointing, and soles upwards.

This should suffice to give you the necessary feel in the water, and you must now try the stroke, kicking out whilst undergripping the rail for forward support.

Make sure that the feet are pointing outwards because this gives a good working surface against which the water can operate to push the body and considerably increases the power of the stroke.

As soon as you have the "feel" of this frog kick, get yourself a cork and, holding this at arms length as you learned earlier, frog kick yourself about the bath. Do not worry about speed at first. Go slowly and concentrate on drawing the knees well up but splayed out, with the feet outward. Study to avoid "screw kicking" and make certain that the legs work symmetrically throughout the kick. Pause between consecutive kicks to judge the glide which results. You will discover faults in this way and, also, learn that you must look straight ahead in order to pursue a straight course.

Probably you are now ready to combine these strokes in the water. Refresh your memory with the arm strokes first and, also, the breathing. Go through the whole sequence slowly and care-

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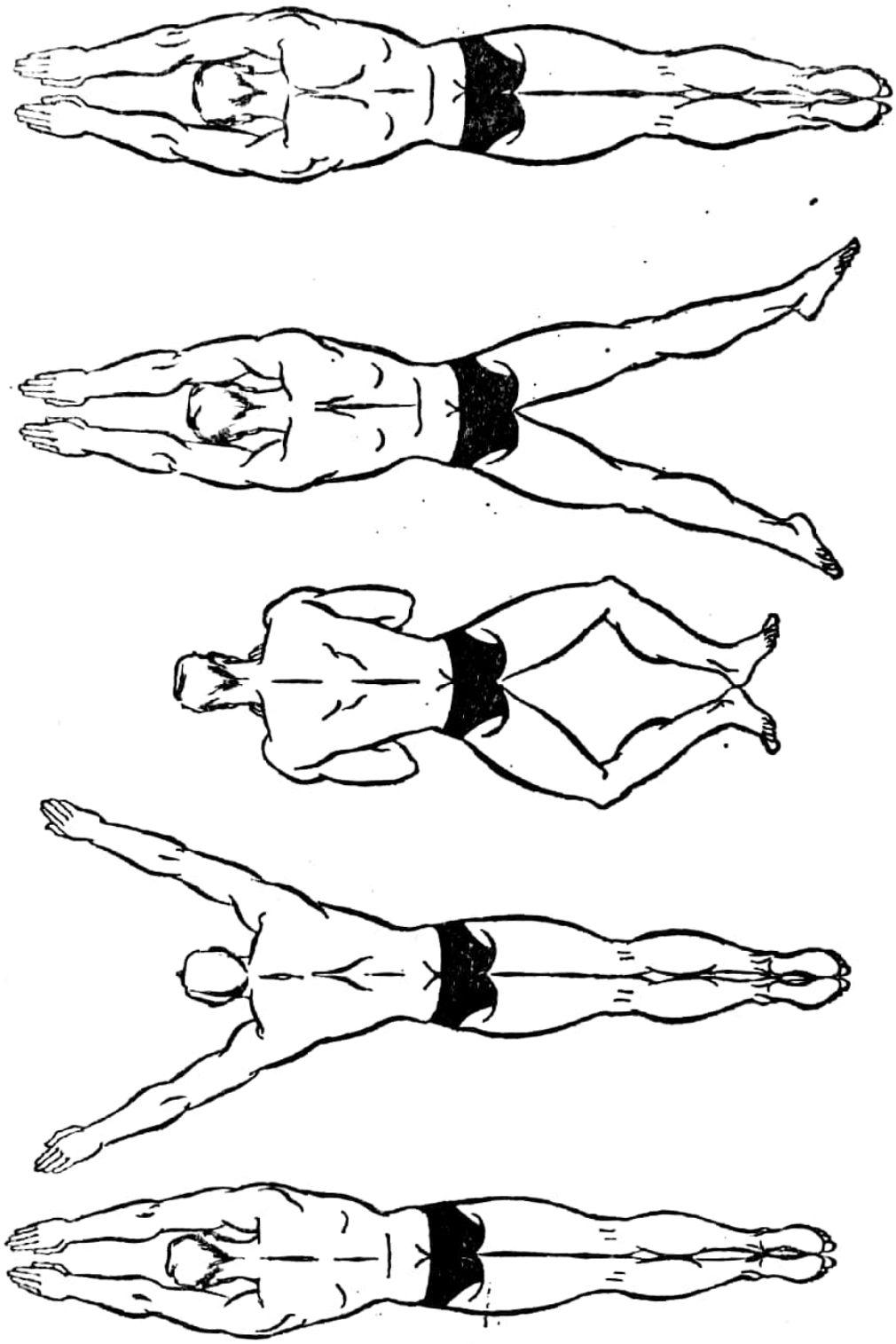

FIG. 27
The Breast Stroke

fully at the bath side, then, beginning from a glide without your cork, follow the movements described below. (See Fig. 27.)

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1. Press the arms sideways, lifting the head slightly whilst inhaling deeply and keeping the legs trailing stretched behind you.
2. Swing the arms in to the chest and draw up the feet with knees wide apart and feet pointing outwards, at the same time lowering the head.
3. Kick the legs, both together, and remember the semi-circular path of the feet. Exhale through the nose and mouth and, at the same time, stretch the arms forward—"blowing" them forward as you exhale.
4. Remain in this position, relaxed, as you glide forward from the momentum of your strokes before resuming the cycle of movements.

Now it is merely a matter of practise. At first the stroke will tend to be ragged and laboured and probably too fast. If you make a point of pausing in the glide position between consecutive strokes, and attend very seriously to correctly controlling your breathing, you will soon find yourself taking a slow, easy stroke cycle, with a short moment of complete relaxation during the glides. This will not win races for you but it is good breast-stroke swimming.

COMMON FAULTS

The commonest fault to which beginners are prone is of a kind which causes breathing difficulties. If you find it impossible to synchronise breathing smoothly, get plenty of practise at the bath side, combining the arm strokes and the breathing, and avoid throwing your head back too far. Emphasise the long glides between strokes and concentrate on slow, controlled exhalations which last the full stroke, with quick, gulping inhalations.

Another fault which it is difficult for the new-

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comer to understand is when he finds himself *stopping* in the water between strokes *instead* of gliding forward. Obviously, this cuts down the relaxation part of the glide and tends to produce an erratic stroke. Make sure your arms are not pulling too far before recovery. See that the side pull also incorporates a slight downward motion. Make quite certain that the fingers are not opened and that the hands are properly cupped during the power part of the stroke.

THE BUTTERFLY

This is an exciting and comparatively new stroke (Fig. 28). It is fascinating to watch, vigorous and tiring for the swimmer, but has the great advantage of being considerably faster than the breast-stroke.

The stroke was originally developed from the breast-stroke, the only difference between the two being the very strenuous over-the-water arm-recovery. Later, a totally different kind of kick was developed and this completely distinguished the stroke from its breast-stroke forerunner.

To begin with, it is probably preferable to adopt the breast-stroke kick with the over-arm recovery. If it is desired to use the butterfly kick as well, this can easily be acquired later.

THE ARM STROKE

Since the butterfly is hardly a learners stroke, it is not necessary to undertake separate land drills. Any competent swimmer will be prepared to learn the new arm stroke in the water, whilst standing. Breathing must be synchronised perfectly with the arm movements right from the very start because the stroke demands that the head be alternately

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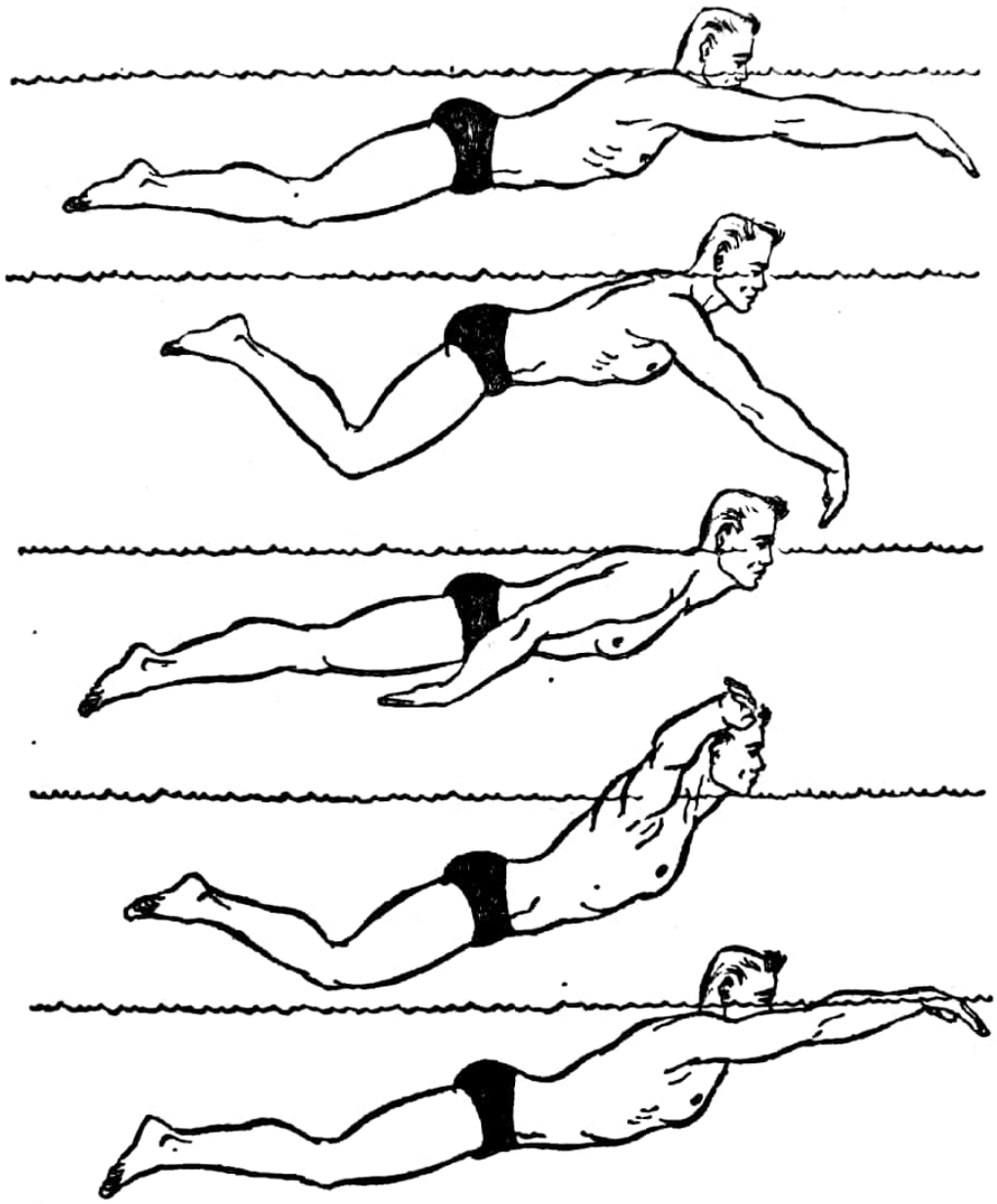

FIG. 28
The Butterfly

under or above the water—which leaves very little choice about the way in which breathing is performed.

1. Stand in the water with arms extended sideways.
2. Press the arms downwards, slightly outwards, and backwards strongly, at the same time inhaling swiftly through a wide open mouth.
3. Lift the hands, little fingers first, so that the

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backs of the hands are facing forwards, well wide of the hips. The moment they are well clear of the water, sweep the arms to the point of entry, moving the arms low over the water, with the head low, and exhale.

When you have become accustomed to the rapid and strong movements of this stroke, combine it with the ordinary breast-stroke leg kick and, with luck, you will be swimming the butterfly. You will probably swallow a gulp or two of water during early attempts—that is why the stroke is not recommended for complete beginners.

Now you may wish to refine this stroke to a proper butterfly by adding the advanced leg kick. This can be practised from an ordinary prone glide, using the cork for front support so that you may concentrate on the leg action.

1. Draw the feet up to the buttocks but do *not* spread the knees which must be kept side by side and pointing downwards. The feet, also close together, should be closer to the buttocks than in the breast-stroke kick.
2. Drive the legs together downward and outward, the feet now parting. This is the power part of the stroke and should be made with great vigour.

When you feel that the stroke has developed the necessary power, combine this with the arm stroke, as follows.

1. Push off and glide.
2. Press the arms down and back, raising the head sufficiently to enable you to inhale strongly in a quick gulp.
3. Lift the hands from the water and, simultaneously, draw the feet up to the buttocks with knees together.

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4. Throw the arms low over the water to the entry position, at the same time lunging strongly with the legs and exhaling with the head down.

Do not be surprised to find this a most tiring action, particular as you learn the stroke. Execute only one complete cycle from the glide position and then stand up and rest. When you feel that you have performed these movements correctly after a few such practises, try two complete cycles before standing to rest. Add one cycle for each correct consecutive practise until you are confident. Do not try to cover a length of the bath immediately or you may well find yourself very short of breath halfway down. Take it easy and learn through accurately-timed breathing how best to perform these strokes before attempting any major distances.

THE DOLPHIN

You will recall that the butterfly was regarded as an offshoot from the breast-stroke in that it imposed a new over-the-water arm recovery which revolutionised the stroke. The next step was a new leg stroke also, and this combination of new arm and leg strokes became the butterfly. The Dolphin may be regarded as an even further development because, although it utilises the same over-the-water arm recovery, it has a startling new leg stroke.

It is tempting to believe from this that the dolphin might be a simple stroke to learn after the butterfly. This is certainly not so, chiefly because the leg stroke is utterly different; indeed there seems to be some doubt as to whether it should be regarded simply as a leg stroke at all since it actually involves a sort of undulating movement

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of the legs and hips. In any event it would be useless to attempt it unless you have already developed a highly powerful front paddle leg action. Most certainly this is not a beginner's stroke.

The arm stroke, however, is precisely the same as that of the butterfly and it is necessary to concentrate immediately, therefore, upon the leg action.

THE DOLPHIN LEG STROKE

It is almost impossible to simulate or practise this stroke ashore so practise must be in the water. Furthermore, it cannot be attempted with any success from the bath rail, and must be performed in the water, and on the move.

Begin from the bath side, with a cork float to support the upper body, and concentrate fully on the legs. Remember before you begin that both legs work *together* throughout the stroke, and are kept *tightly closed* as if they were in fact a single limb.

1. Drive both legs downwards in a *double* front crawl kick.
2. Straighten the legs at the knees towards the end of the down drive.
3. After a brief pause kick both legs up again from the hips, allowing the knees to bend very slightly.

These basic movements hardly describe the actual complex and difficult movement required, but merely break it down into some sort of simple parts for the learner. The idea is to secure a loose and very flexible undulation or fish tail action with the legs weaving up and down. Fortunately it can be performed whilst back floating and

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practise in this position will assist in understanding. Try to wriggle the whole body in an undulating movement which includes the hips—a sort of hula hula in one plane only, which commences at the hips and works down to the feet.

This eel-like wriggle is vital to the stroke and it is useless to go any further until this is achieved. Several attempts from the bath side should be followed by attempts whilst swimming beneath the surface with the arms in a glide position. At first only short distances will be covered, but gradual progress will reward really determined efforts. Then, and only then, is it possible to combine the leg and arm strokes.

The arm stroke is as for the butterfly and the breathing is the same. Two leg movements occur for each complete arm cycle.

THE COMPLETE STROKE

1. Push off and glide.
2. Press the arms through the water to the sides, at the same time driving the legs downwards and exhaling. During the latter part of the arm-pull straighten the legs out at a slight angle to the body.
3. After a brief pause move the legs in line with the body again, and as the arms reach the thighs drive the legs down and straighten them again, at the same time recovering the arms over the surface as you inhale.

Repeat the cycle from 2.

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Chapter IV

THE LIFE-SAVING KICK AND THE ENGLISH BACK STROKE

The great majority of activities involving life-saving or rendering assistance to swimmers in difficulties demand that one or both arms are occupied fully with holding, towing or otherwise supporting the person requiring aid. All forward movement must of necessity, therefore, be provided by the legs and feet. It is essential that the life-saving kick is thoroughly understood and practised well to ensure an efficient and powerful leg action. (See Fig. 29.)

The leg stroke is probably best practised on the bath side and out of the water to begin with. Sit on the hands, with the legs dangling in the water.

1. Stretch out the legs, side by side, with toes pointing.
2. Part the knees slightly and drop the legs from the knees.
3. Sweep the legs along the wall of the bath in a circular motion and bring them back to the straight position.
4. Repeat the cycle.

WATER PRACTISE

Begin from a back glide, propelling by hand sculling, and then change over to the leg action. Be careful to avoid regarding this stroke as a sort of upside-down breast stroke kick. You can assist

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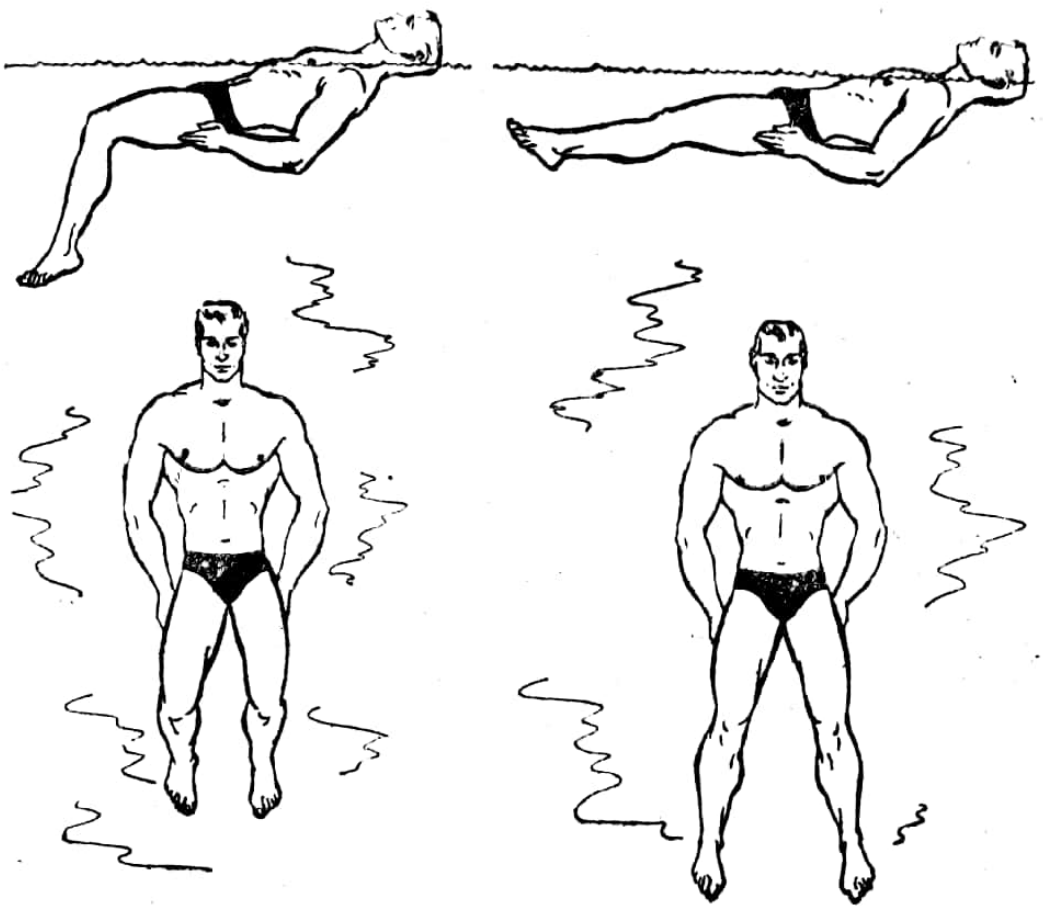

FIG. 29
The Life-saving Kick

forward movement temporarily with hand sculling until the "feel" of the stroke is appreciated. Once familiar with the basic stroke, omit hand sculling, and try towing a cork or some other object to keep your hands still whilst using the leg kick only.

TOWING A PARTNER

Whilst practising this stroke with a partner in tow it should be borne in mind that during early stages the partner being towed may well find difficulty in breathing, owing to your inexperience with the stroke. Never try, merely for practise, a non-swimmer partner or anyone not completely capable of looking after himself because you can cause him great discomfort and considerable fear which would be bound to affect his confidence and

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swimming progress later. Preferably get a partner of an experimental attitude and take the whole practise in turns so that you yourself get some idea of the problems of the person being towed.

During early practises it is advisable to ask your partner to assist by back floating and hand sculling whilst you do the main towing. This at least ensures him regular breathing and avoids discomfort. Once you find your leg-stroke sufficient, study your hand holds with a view to keeping his head well supported, and only then ask him to omit sculling or kicking actions, leaving you to perform the stroke in the manner for which it was designed.

THE ENGLISH BACK STROKE

Although this stroke has largely been superseded by the back crawl in competitive swimming, it is regarded as a valuable respiratory exercise in many circles and is, in any event, a most pleasant and natural stroke.

This much is evident to anyone who knows the stroke and it becomes quite obvious to the learner who tries the arm stroke and breathing in proper co-ordination, even in land drill. The leg stroke is identical to the life-saving kick and requires no detailed description here (see page 68).

ARM STROKES. LAND DRILL

These are best performed in front of a mirror so that symmetry and timing may be carefully observed. Stand with the arms at the sides and squarely facing the mirror.

1. Lift *both* arms upwards in a semi-circle to a position stretched above the head, in line with the body and with palms facing forward. At

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the same time inhale strongly as the chest expands under the influence of the stroke.

2. After a brief pause, turn the palms outward and sweep both arms down to the sides, at the same time exhaling through the nose and mouth and remembering to keep the arms straight throughout the movement.
3. Repeat the cycle.

The leg kick occurs once for each complete arm cycle.

WATER PRACTISE

After a short practise by the mirror you should be ready to try the stroke from the rail in the water. This simple and beneficial stroke offers no complications which are not easily observable from this position. Begin with the toes tucked in under the rail as the body lies along the surface in a back glide position, but with the arms held to the sides.

1. Lift the arms back and upward until they are situated along the surface above the head, with palms upwards. Inhale during this movement.
2. After a brief pause, resting in this full glide position, turn the palms out, and pull the arms straight to the sides as you exhale through the mouth.
3. When the cycle is repeated you will soon discover that inhalation must occur *early* during the first arm movement because water tends to run down the arms into the mouth as the stroke proceeds.

Once the rhythm of the stroke is regulated push off with a kick, glide away, and combine this pleasant arm action with the leg kick learned earlier (page 68). With little practise you will

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master this very pleasant and restful stroke. Remember to pause during the glide each time, and enjoy the moment of utter relaxation as the body slides smoothly through the water.

Chapter V

UNDERWATER SWIMMING, FLOATING AND AQUABATICS

The breast stroke is the basis of practically all underwater swimming. As soon as the beginner has sufficiently mastered the stroke for surface swimming it should be used to explore the problems of controlling the body under the surface. This is of tremendous importance in the building of further confidence, as well as being one of the most enjoyable aspects of the sport of swimming. We are not, of course, concerned with assisted underwater swimming involving breathing apparatus, snorkel masks, or flippers, but merely with the basic essentials of moving about under the surface whilst holding the breath.

Using the breast-stroke it is a fairly simple matter for any confident swimmer to cover a width of the average swimming pool under water, especially if he begins with a dive, and, once proficiency is achieved, swimming the full length is within the capabilities of most healthy people.

For the beginner the first problem is often simply one of getting the body far enough under the surface to swim comfortably and purposefully . . . and this is some measure of his success as a swimmer, especially when it is considered that so short a

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time ago he was far more worried about keeping himself afloat!

It is indeed quite a thrill for him to recognise how very much progress has been made since those early struggles at the bath rail.

SUBMERGING FROM THE RAIL

The simplest way to get well below the surface for underwater work is to begin at the rail, where so many new and exciting ventures have been initiated. All that is required is to prepare for a simple "plunge" or "glide" as if intending to glide away. The difference is that on the "push off", the head is tucked into the chest and submerged as soon as possible, the hands are pointed downwards, with palms down and wrists bent, and the whole "kick off" is aimed at sending the body towards the bottom of the bath.

During early attempts it is wise not to aim too deep because of the beginner's natural concern about getting up to the surface again, and because of the possibility of striking the bottom before the hands have become properly trained as a means of controlling direction.

Take the plunge in an oblique downward direction, therefore, and with hands outstretched in a typicaly prone-float position. Once the body is submerged, swim with a few arm strokes before turning up to the surface.

Once familiar with this, try again using both arm and leg strokes, and reach as far across the bath as possible before surfacing, increasing the distance covered under water with each successive attempt. Soon you will find yourself swimming across the bottom and surfacing at the opposite rail but do not worry if you do not attain this ideal.

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Obviously you must hold your breath, and keep your eyes wide open so as to see where you are going. It is great fun to swim across the bottom of the bath watching the tiles slip by below you.

After some practise you will be able to get a good strong push off in the desired direction which will by itself carry you a considerable distance without any supplementary arm work. Try this, controlling your return to the surface simply by turning the hands upward at the wrist and floating gently upwards. No better demonstration of the innate buoyancy of the human body could possibly be asked than the sensation of gliding slowly and inexorably towards the surface without having to take any direct action to help! Soon this wrist control over up or down movements will be sufficient to provide complete confidence in your ability to guide yourself safely.

If you have managed to learn the dolphin leg-kick with any degree of proficiency, you can couple this with your breast-stroke arm action and achieve a rather faster underwater movement which is every bit as pleasant as the orthodox breast-stroke and which looks very effective to the observer on the surface.

SUBMERGING FROM THE SURFACE

It is now necessary to get away from the rail and learn how to submerge from midwater at will in any position. (Fig. 30.) Begin by assuming the horizontal prone float position. This, too, can be achieved without starting at the rail. Simply stop swimming in the glide breast stroke fashion!

Whilst still gliding forward take one further arm stroke, raise your head, and inhale strongly prior to submerging. Depress the head again,

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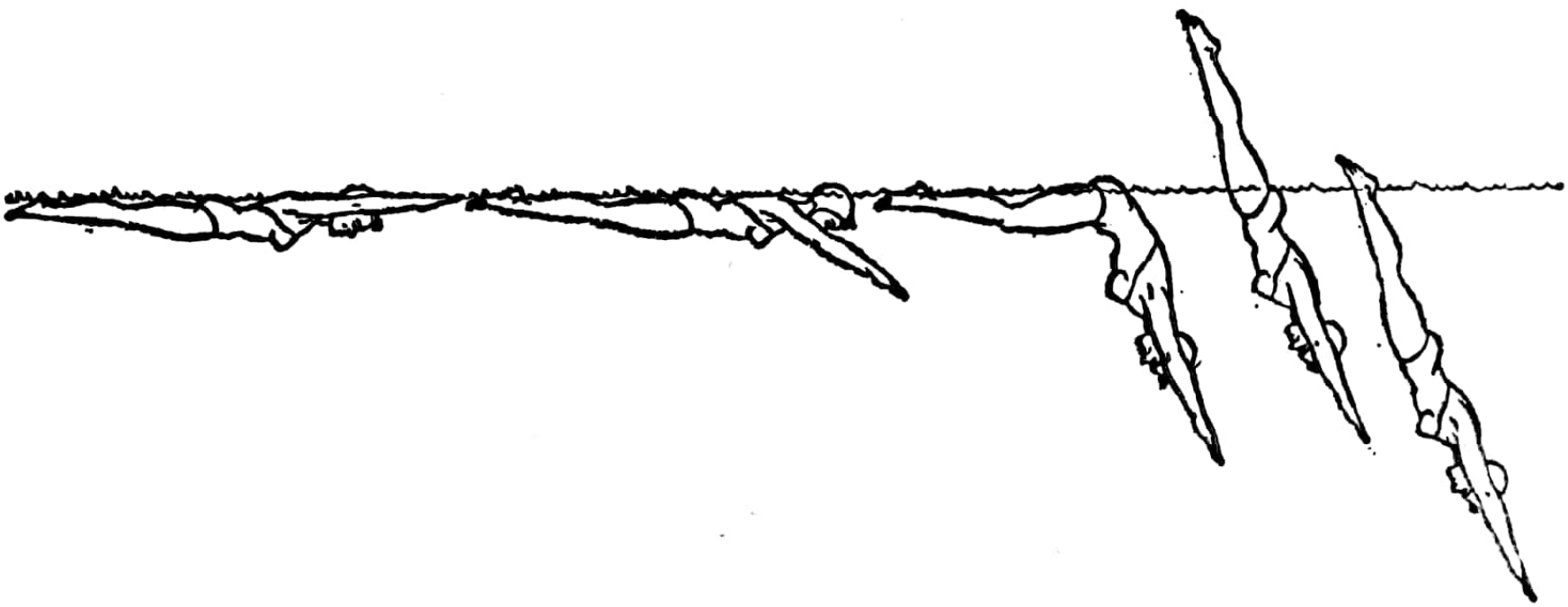

FIG. 30
Surface Diving

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tucking it forward on the chest; take one further arm stroke, at the same time bending your body as if to perform a "head over heels" action ashore. This brings the buttocks forward over the head which is already leading the trunk obliquely below the surface. If possible raise the legs out of the water momentarily and this will give an extra impetus to the downward movement, and you will glide gently towards the bottom, assisting the plunge by further arm strokes if required, and levelling off a foot or so from the bottom; either during gliding, by bending the wrists up slightly; or during swimming, by arching the back.

Now you are fully capable of surface diving or plunging to the bottom from the rail, and can control simple body movements below water.

FLOATING AND AQUABATICS

Complete control and relaxation in the water depend on rather more than a mere ability to swim. To this end, the skills which follow are of great value, as well as being health-giving and pleasurable. They assist a great deal in providing a sense of rhythm and balance in the water, and the majority of them are well within the capabilities of any swimmer. They are perhaps particularly well suited to the swimmer who has no aims towards competition swimming, but who swims entirely for the pleasure of attaining complete control over his body in water.

Most of these skills, or aquabatics, are commenced from a prone, supine, or tucked floating position, and, since good floating is essential to good swimming anyway, this is the obvious place to begin.

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HORIZONTAL PRONE FLOATING (See Fig. 6.)

This will already have been largely mastered during "gliding" practises from the bath rail, but since it is the starting position for many of the skills which follow it must be achieved either from the standing position, or from a swimming movement. It must also be practised in a stationary pose, since all forward movement should cease before commencing the skills which follow.

Stand in a suitably clear place and breathe in gently leaning easily forward, stretching the arms along the surface just wide of the shoulder. Allow the legs to rise gently to the surface, and lower the head into the water, slowly closing the arms above the head. The body should now be in a straight line from finger tips to toes, with the legs side by side and the soles of the feet upwards, and toes pointing. Always keep the eyes open, whether afloat or submerged. This is important for obvious reasons.

To perform a surface dive from this position it is only necessary to take a long breast-stroke arm pull, tuck in the head, bend the body at the buttocks, and pull strongly with the arms as the buttocks come over the head. Raise the legs above the surface as the body slopes obliquely to the bottom and the weight of the legs should induce a gentle dive without further assistance from the arms.

SUPINE FLOATING (See Fig. 19.)

In true back floating no hand sculling or leg strokes are required, and it is important to realise that it is necessary to get as much of the body submerged as possible, allowing the buoyancy of the body to be fully operative in supporting the face above the

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surface. This makes the back float a supremely important skill, because it is one of very few completely relaxed positions which permits free breathing without requiring the assistance of any strokes.

The supine floating position is the starting position for many of the aquabatic skills detailed in the following pages, and this also requires it to be mastered.

You may begin from the rail, from a front float position (turning the body over as desired), or from a standing position. The important thing is to attain a position where the body is stretched face upwards along the surface, with arms over the head and legs straight. From a standing position it is merely necessary to perform the actions of sitting down slowly, at the same time gently resting the head back on the surface of the water, and hand sculling to maintain positive buoyancy during the period when the feet are taken from the bottom. Press the head well back, at the same time keeping your eyes towards the feet, which should be well submerged. Very gently move the arms from the sides to a position just wide of the shoulders and, at the same time, lift the legs, holding them slightly at the knees. Gradually straighten the legs to an astride position and bring the arms to a star-floating position. Breathe gently and steadily, moving the arms and legs slowly into the correct back floating position with the body straight and relaxed. Do not allow the hips to sag to the point where the back becomes hollowed, but keep the chest up as far as possible. Avoid allowing hands, arms, knees or feet to break surface. This will give a high "face" floating position.

Good, motionless back floating takes time and

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determined practise. Different people find that slightly differing limb positions are more suitable for their own particular build and good buoyancy. It is necessary to experiment a trifle with these to find which suits you best. Try raising or lowering the head slightly, even going to the extreme of looking over your head at the water beyond your eyebrows. Try, also, a little slackness at the knee. Minor adjustments of this kind will offer considerable help in finding your own best back floating technique.

HAND SCULLING

This has already been dealt with earlier (page 46) but since it is so valuable in the skills which follow remember that to scull *forward* whilst supine floating it is necessary to cup the hands and work the wrists so as to drive water *towards* your feet. If you want to move *feet first*, work the hands in the opposite way to drive water in the *opposite* direction or, alternatively, you can use the breast-stroke hand sculling motions.

FORWARD SCULLING WITH BREAST STROKE WHILST SUPINE

This is a variation of the ordinary hand sculling action, and it gives greater control, enabling the body to move in almost any direction, and requires no leg or foot work.

Practise from the toe grip at the rail, unrolling the body into the supine position with the hands at the sides. Now look towards the feet, bend the body at the hips, and place your hands, with elbows bent, palms down on the stomach.

1. Straighten the elbows, pushing the hands towards the feet.

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2. Sweep the hands lightly back to shoulder level half tilting the cupped palms to give a grip on the water.
3. From shoulder level bring the hands back to rest on the stomach.

With very little practise you will find this quite strong arm stroke pushing you towards the rail and probably upsetting your toe grip there. At this point release the toe hold and push off, awaiting the end of the short back glide before stroking yourself feet-first back to the rail again.

Now you can move in practically any direction by hand sculling. Really to enjoy the flexibility of motion this stroke gives, try to imagine yourself to be a liner which requires to be berthed alongside a jetty. Simply scull yourself into position!

If during this forward sculling you find a tendency for your feet to sink, point them with toes well forward and soles obliquely downwards, consciously trying to keep the tips of the toes breaking water.

TUCKED FLOATING

This is probably the easiest of all floating positions, though it has the disadvantage that it requires considerable movement to resume a breathing position. Simply begin prone floating, then fold the body up under you, drawing the knees on to chest, and grasping the shins with your hands, making your body as compact as possible. Movement must be controlled and symmetrical otherwise you will simply turn over on one side.

TREADING WATER

The ability to tread water is invaluable to any swimmer, both in the field of aquatic games and

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in general swimming, since it enables the body to be maintained in a definite position upright in the water without forward propulsion. It is also essential in the casual kind of swimming in which we all indulge so enjoyably when on holiday by the sea.

There are two basic methods employed, and which is selected depends pretty well on the build, buoyancy, and preferences of the swimmer. The most popular and usual method is simply a development of the dog paddle learned earlier, with the fundamental difference that the body is upright instead of horizontal in the water as the stroke is used. The arm stroke consists of a definite dog paddle with alternate arms, but taking place from the elbow rather than from the shoulder, and directed down the body rather than in front of it.

The leg movement, too, is similar to the dog paddle leg stroke except that it involves a slightly rotary motion similar to that in cycling, but with a "high stepping" character.

The other alternative may be regarded as a development of the breast-stroke, in which the arm action is a two-way sculling action across the chest, and with hands working from the centre outward, and then back towards the centre again as the palms are alternately sloped obliquely one way and the other according to the movement, and with the aim of directing water downward.

The leg movement may be a plain breast-stroke frog-kick, or alternatively a crawl paddle action. A tremendous number of variations exist and swimmers tend to select the method which they find the simplest. A little experiment based on

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ordinary swimming, but with the body vertically situated in the water, will suggest several alternatives.

It is perfectly possible to support the body in the water simply by hand sculling in this vertical position or, alternatively, by means of the crawl paddle. Generally speaking, a stroke which combines both arm and leg work is less arduous and beginners are best advised to select one of the basic strokes suggested here, adapting it to suit their own needs.

MOVEMENTS FROM THE PRONE FLOATING POSITION

The following movements require a wide variety of ability, some of them being simple enough for beginners, and others requiring greater balance and control. All should begin from the prone floating position, and it is important that the body is still, with all movement ceased, before the action begins.

FORWARD SOMERSAULT STRAIGHT

From the prone position raise the head to look along the water and inhale. Tuck the head down, and commence a strong surface dive. As soon as the trunk is submerged work the arms, sculling in a circular motion alongside the hips to rotate the body with chin tucked in and legs straight. Return to the prone position on the surface at the end of the somersault.

CANOEING

Push off from the side in a long glide. When movement has ceased arch the back, and lift the head, pressing it backwards. Propulsion is obtained by hand sculling with the arms at the sides.

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FISH SWIMMING

This is a graceful underwater movement giving the swimmer a delightful sensation of speed as he watches the tiles on the bath bottom slipping by. Commence from a shallow dive from the rail, pushing off towards the bottom at an oblique angle. Straighten the body in line with the bottom and keep the legs together. The arms are now brought to the sides and gentle forward propulsion is obtained by hand-sculling with arms close to the sides. Sculling can be made more effective if desired by a slight scooping movement of the hands. If this is too strong however, it will drive the body downward and the head may scrape the bottom of the bath. To avoid this, press the head backward and adjust the rate of sculling to maintain the body in a horizontal position.

THE PORPOISE

Commence a surface dive from the prone float position and begin fish swimming when completely submerged, changing direction at will by turning the head from side to side and undulating laterally. It is considered a refinement to co-ordinate these movements and exhale slowly, rising to the surface slowly with your own bubbles.

THE FLYING PORPOISE

From a surface dive assume a crouched position on the bottom with feet together and hands on the chest in a breast-stroke "ready" position. Look down to the feet and secure a firm foothold before stretching the legs in a leap to the surface. You should then break surface vigorously, and in shallow water it is amusing to see just how high you can leap from the submerged position.

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Re-entry to the water can be in a plain dive or from a "jack knife" above the surface, or even feet first.

To vary the single porpoise into a series of cycles, repeating the movement successively, it is necessary to inhale swiftly on breaking surface, allowing the weight to carry you back to the crouched position where you exhale firmly, and repeat the movement. To do this it is essential to leap vertically and avoid oblique movements.

Performing the same skill obliquely gives a smooth but lively break through the surface with a supple re-entry from a shallow dive.

MOVEMENTS FROM THE SUPINE POSITION

Back floating offers a good starting point for many skills, and any keen swimmer will soon find himself inventing new movements as well as coupling up existing ones to form interesting movement cycles.

THE BACK SOMERSAULT STRAIGHT

Begin supine, and concentrate on keeping the body well stretched with legs together. Inhale, and press the head back into the water, arching the back with the arms extended just below the surface at roughly shoulder level. Light sculling will start the body sinking head first and the movement is continued by stronger sculling until the revolving movement is completed. Slow exhalation during the somersault makes the movement attractive to the spectator.

THE OYSTER

From the supine position, bend sharply at the waist, reaching out to touch thetoes. In this "jack

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knife" position the body will roll slowly forward of its own accord and as the fingers and toes point to the bottom the body is then rolled sideways, unfurling and rolling to the surface so as to arrive there in the supine position.

THE PROPELLOR

Take up a supine floating position at the rail with hands at the rail and feet extending outwards into the bath. Give a light push off with the hands, moving feet-first away from the bath side and maintaining propulsion by fanning or sculling the hands from their position above the head, driving the water with the hands away from the head. At first the appropriate fanning of the hands may be insufficient to maintain movement, in which case the whole arm should assist the sculling. Stretch the arms to a point just wide of the shoulders with the palms outwards, then turn the palms in and press the arms to the extended position above the head again. Imparting a light rotary motion to the arms will help and, as propulsion improves, the movements of the arms should be minimised until the hand sculling suffices.

SOMERSAULT STRAIGHT, FEET FIRST

This difficult movement begins from the supine position. Propulsion is obtained by sculling feet-first, and when some momentum is obtained by dropping the feet from the ankles, keeping the legs straight, arching the body a little if necessary to help the legs sink. When the body is vertical, arch the back strongly and press the hands upward past the thighs to drive the body down further as the arched body position causes it to revolve feet first. Scull strongly to complete the movement

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when the body should return to the supine-floating position.

MOVEMENTS FROM THE TUCKED POSITION

Most of these are actually simpler to perform than those requiring the body to remain straight. Sculling movements must be performed as close to the body as possible with the arms tucked in as far as possible.

SOMERSAULT TUCKED, FORWARD

From a "sitting position" with arms extended forward at right angles below the surface, press the arms back, inhale, depress the head and continue the arm movements to rotate the body. Keep well tucked until the turn is complete.

SOMERSAULT TUCKED, BACK

Extend the arms backward and pull symmetrically in a semi-circular sculling motion so that the head submerges as the feet come up over the trunk. Continue the arm movements until the turn is complete.

VERTICAL FLOATING

Commence treading water vertically, and gently slow down, finally ceasing the leg movement, drawing the legs straight and close together. Drop the head back to assist balance, breathing gently and maintaining equilibrium by hand sculling. When equilibrium is achieved with just the upturned face breaking surface, cease sculling and smoothly extend the arms just below the surface with palms up. If the arms are too far back the legs will tend to rise, and the arm position

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must be adjusted to balance the body in the vertical floating position.

WALKING ON THE HANDS

Surface dive to the bottom so that the body is vertical as the hands touch bottom. Remember that the head will balance the body which should now be straight with toes pointing. The body position is identical to that of a good handstand in the gym, but with the hands just off the bottom of the bath, and sculling gently to maintain equilibrium. In shallow water this can be very effective if the legs are above water from the calves to the feet.

ROLLING LOG

From the supine float position roll laterally by submerging one shoulder and allowing the immersion to continue down to the hips. Once the motion is started, little relaxed movement is required to maintain it. Slowly exhale as the head faces downwards, inhaling again when it breaks surface, and continuing the movement rhythmically.

CHAPTER VI

AN INTRODUCTION TO DIVING

DIVING is an integral part of good swimming and watermanship, and even the beginner with no ambitions to take part in competitive diving should be capable of simple dives both from the surface and from the bath side, in order to get the most from his swimming activity. Diving practises

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therefore should begin as early as possible, progressing towards efficiency as swimming ability develops. This does, of course, require that he should feel at home and confident in the water before attempting diving, but it is by no means necessary for him to be an expert.

Any beginner in fact who has reached the stage where he can swim a width comfortably, whatever the stroke, and can regain his standing position from the prone and supine floating position without assistance is well and ready to begin diving work.

First it is essential to be able to control the body under water. This is best achieved through the agency of the underwater swimming described in the previous chapter but, even if you have not yet mastered underwater swimming, it is still quite simple to learn the plunge from the rail to the bath bottom (See Fig. 30), regaining surface again by the simple expedient of pointing the hands upwards whilst gliding prone below it. It is indeed a salutary lesson on the inherent buoyancy of the body to find how easily and smoothly it rises to the surface with no real effort on the part of the swimmer. Once this underwater control is established the early steps leading towards correct diving will soon follow quite naturally.

ROLLING OFF THE BATH SIDE

The greatest fear of diving arises from the perfectly natural repugnance of falling head first . . . even into water! This is overcome by easy stages, commeneing at the bath side. Simply lie there parallel to the rail, and on the very edge of the bath. Roll over the edge, grasping the rail as you do so, and steadying the body as you splash into

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the water. Do this several times, and then progress to rolling in without touching the rail at all.

Now try again with the trunk hanging over the edge, rail in your hands. Pull yourself forward and slide gently into the water, converting the movement to a shallow plunge towards the bottom when you are submerged . . . just as you did when submerging from the rail. (page 74.)

This can be a very pleasant occupation, and you will probably enjoy it so much as to practise many times without worrying. Once enjoyment comes, concentrate on keeping your legs together on entry, and remember to point the toes correctly.

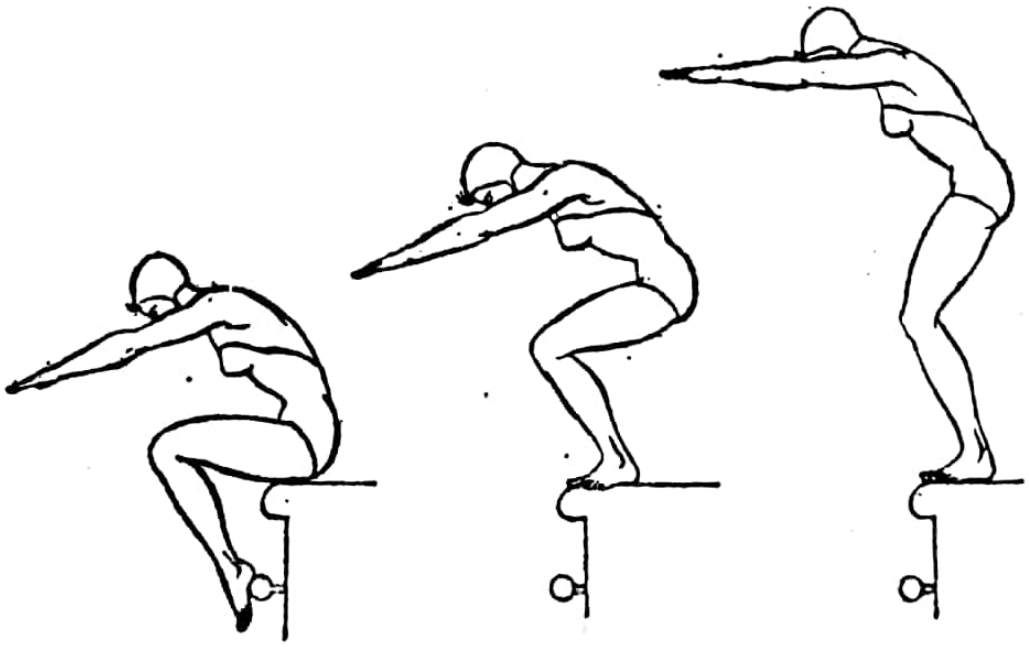

FIG. 31
Crouch Dive

CROUCHING FROM THE RAIL

Begin sitting on the bath side with the feet on the rail. Keep the knees apart, and the feet together (Fig. 31.) Lean the trunk forward and extend your arms as if to lean on your hands on the surface. Tumble forward, hands and head first, trying on

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entry to straighten the legs and point the toes. Try again with a light "push off" from the feet and then "follow through" with legs straight and toes pointed. Remember to keep your head tucked between your arms throughout these exercises.

THE CROUCH DIVE FROM THE BATH SIDE (See Fig. 31.)

Stand on the bath side, facing the water. Keep the feet together and hold the arms outstretched towards the surface. Bend the knees and tuck yourself up with head down, trying to get as near the water as possible. Then simply tumble forward into the water as before. Once familiar with and confident of this, try to straighten the legs a little further in the bath side stance on each consecutive attempt. Each time the body should be less tucked, then less crouched, and finally you should be in a position simply standing up on the bath side and tumbling or falling like a log into the water.

THE RACING PLUNGE

This will give you a good idea of an outward take-off and it begins from a semi-crouch position. Stand on the bath side with feet about twelve inches apart, legs half-bent at the knee, and the body leaning forward slightly. Extend the arms backwards and tuck the chin into the throat. Swing the arms forward vigorously in front of the body, roughly parallel with the surface, and at the same time straighten the legs as you leap out over the water, entering with a splash, and slapping the hands on to the surface to take the shock of entry.

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THE JUMP DIVE

Stand erect with feet together and toes overgripping the bath edge. Extend the arms to shoulder level in front of the body and stand quite still, looking straight ahead.

Without looking at the water, swing the arms down to the sides and beyond the thighs, at the same time slightly bending the knees. Without any pause swing the arms smoothly forward and upward above the head. At the same time straighten the knees swiftly, stretching and springing upwards and slightly forward, entering the water feet first. You should glide into the water smoothly with hands and arms above the head and the head looking straight to the front. (Fig. 32.)

STRETCH DIVE

Stand erect as before but with the hands stretched above the head with palms forward. Look straight ahead. Reach up on the toes and bend the knees slightly before falling forward with the body straight. As you reach the point where balance is completely lost, straighten the knees and give a light push off from the toes. You will enter the water hands first, neatly, and quietly, and now that the training exercises are completed you are ready to try a header from the bath side.

THE ENGLISH HEADER

Stand erect on the bath side with feet together, toes overgripping the edge, and hands to the sides. Hold your head erect and look straight in front.

When you are comfortable, raise the hands to shoulder height in front and pause for a moment in this position. The palms of the hands should face

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down and the eyes should be looking straight ahead.

Now swing the arms to the sides and beyond the thighs, at the same time slightly bending the knees. Without any pause swing the arms up and beyond shoulder level, smoothly continuing the motion to bring the arms above the head. At the same time straighten the legs, and with a swift knee and ankle action spring upwards and forwards. Press the head gently down in flight and enter the water finger-tips first and as nearly vertical as possible. Practise this basic dive whenever you possibly can, using it to enter the water on every conceivable occasion. Each time try to concentrate on improving one particular aspect of the dive.

Think first of keeping the body straight, then think of keeping the legs straight in flight and, finally, concentrate on pointing the toes. (See Fig. 33.)

SPRINGBOARD DIVING

Most swimming pools have a one-metre board and if you have ventured along this you must surely have noticed how it trembled as you approached its end. Probably this was enough to prevent you experimenting further at the time. Now that your bath-side diving is progressing satisfactorily it is time to begin to appreciate the techniques of the springboard.

First you must get the "feel" of the board, and try to appreciate its rhythm. But do this when no-one else is using the board and you have time to "play" with it a little.

Walk slowly to within a few inches of the end of the springboard and feel it responding like a live

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thing to your weight. Then walk back again. You probably found that the board sprung at your feet so that by your third step you were "out of tune". Now experiment by walking at a pace which will keep the "tune" of the board and you will soon find the length and speed of pace which brings the action beautifully into motion with you.

Keep your body straight during these practises and walk with a heel and toe gait. Soon you will find yourself able to control the responses of the board so that it neither becomes out of rhythm, nor interferes with the smoothness of your gait.

SPRINGING THE BOARD

Stand about four or five inches from the end of the board and wait until it is quite still. Now take the weight on the balls of the feet, and, bending your knees slightly, spring upward. If you swing your arms up in unison with the spring you will add height to the jump. When you land, do so on the toes, sinking to the heels and flexing the knees lightly to absorb the rebound of the board. Practise single jumps in this way to gain confidence and then combine two or three jumps consecutively, each time taking off with the spring of the board, increasing the height and using your arms to assist balance. A short spell at this will give you a very sensitive idea of the "feel" of the springboard. It is important to remember that every springboard has its own slightly different "feel" and each time you visit a different bath you must first get to know this. You have probably seen expert divers taking a few leaps at the board to get the "feel" of it before commencing work.

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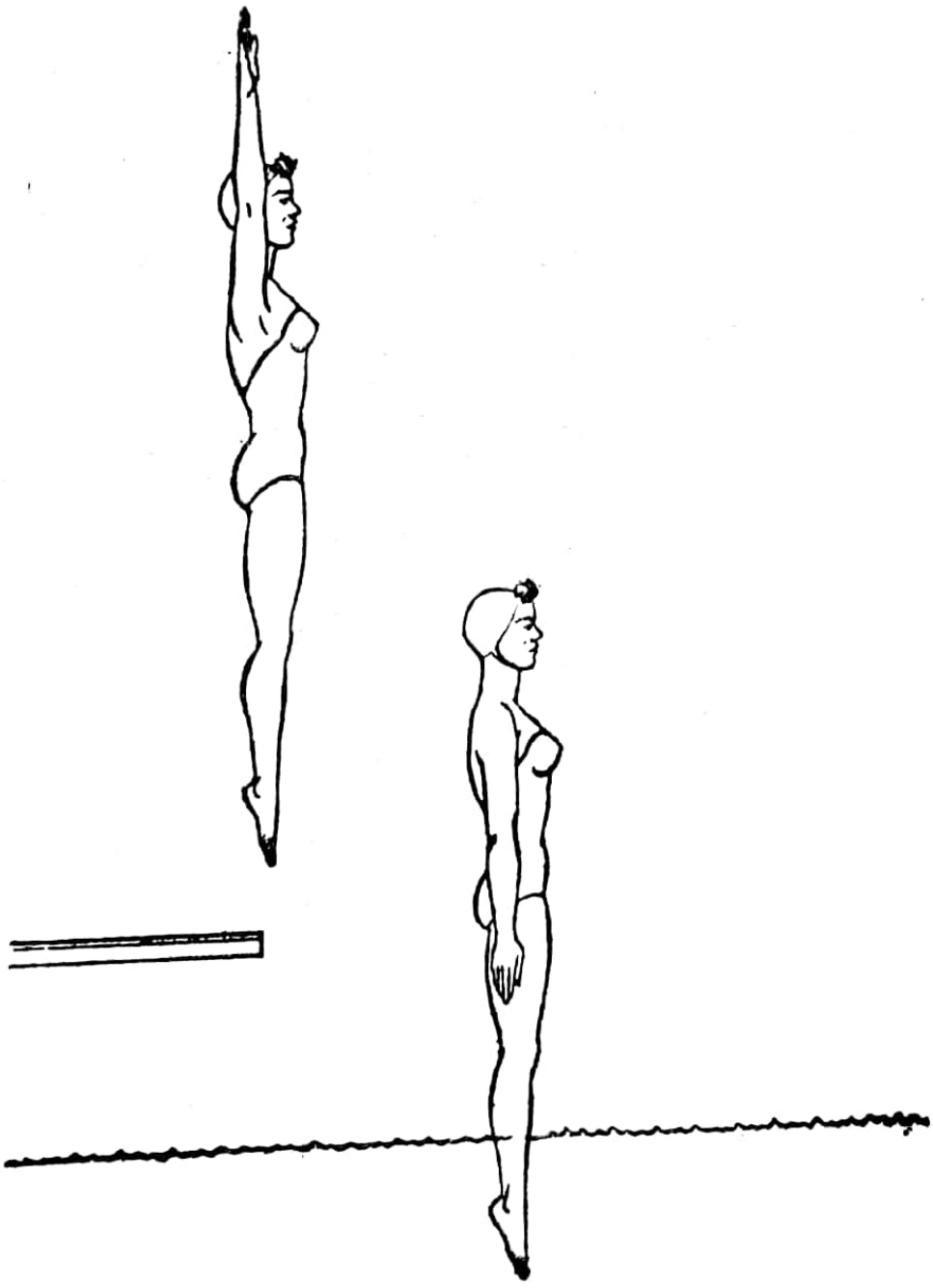

FIG. 32
Springboard Jump

THE STANDING JUMP

This is an equivalent jump with feet-first entry to that used earlier from the bath side. Stand on the very edge of the board, curling your toes round the edge to get a secure grip on the matting. Raise your hands to shoulder height in front and stand

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quite still until the board itself is still, staring directly in front of you all the time and never looking down at the water.

When the board is settled, swing the arms down beyond the thighs, then sideways and outwards to shoulder level. The board will automatically respond to this movement and, as it "gives", swing the arms down to the sides, forwards and up again above your head, straightening the legs, and using the spring of the board as you leap upward and slightly forward. Keep the body straight with arms above the head in flight and enter the water feet-first. Now you can attempt your first

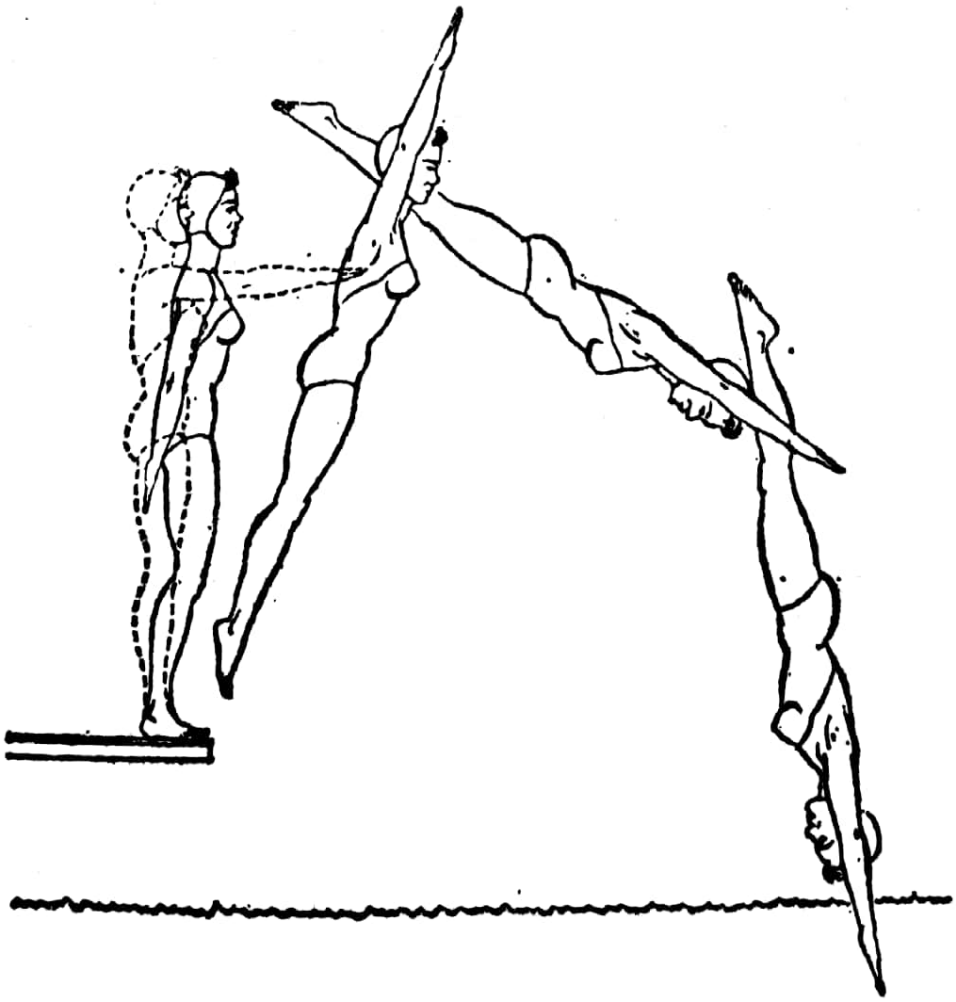

FIG. 33
Diving from the Springboard

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springboard head-first dive, and you are on the way to better diving—greater fun and more effective swimming as it should be enjoyed.

Once you can swim a few strokes and dive as well you will never look back as you share the many pleasures and exciting, health-giving activities which this "finest of all sports" can bring. As you become more and more expert you will, of course, forget your earlier days of fright and helplessness in water, but it is to be hoped that you will never forget them completely enough to forget your manners, too. Expert as you may be, never omit to take great care with others less experienced than yourself, giving them clear space in the water whilst they learn and avoiding any unnecessary splashing and exuberance near them which might slow down their progress or interfere with their confidence. Better still, extend them a helping hand by telling them of your own early mistakes and by sparing a moment or two to support them in the water or guide them through the next difficult phase. In this way you will avoid the mistake of being a "show off", simply because God gave you a body more beautiful or muscular than that which those less fortunate may have. Remember that your physical form, like inherited wealth or health, is something for which you personally can claim very little credit . . . it was just the "luck of the draw". Help others to gain by exercise and control what you got for nothing.

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